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OF THE

## OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLA., JANUARY, 1928

NUMBER 1

Published Monthly at Muskogee, Oklahoma, under direction of the Council.

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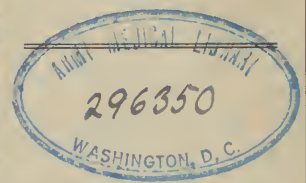
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## UNUSUAL CONDITIONS FOUND IN THE KIDNEY, URETER AND BLADDER

DRS. W. J. WALLACE AND S. F. WILDMAN  
OKLAHOMA CITY

Anomalous urinary conditions have been regarded as very rare but in our experience we have found them quite common when worked out along urological lines. The following cases will illustrate several interesting and different types which we have encountered. Both congenital and acquired are, by no means, as unusual as we formerly supposed. In the daily round of practice any urologist who is on the alert will run across a substantial number of them and be more amazed at the variety of "disarrangements" found in the urinary tract of apparently normal individuals. The most common causes of these unusual conditions are (1) trauma, (2) surgical injuries or errors associated with operations, (3) mechanical obstruction, (4) inflammatory conditions, and (5) congenital.

### TRAUMA

*Case 1.* R. W., white, male, age 28; seen May 30, 1926. Past history negative except appendicitis eight years ago. March 18, 1926, patient fell fifteen feet, striking on feet and hips, followed by acute pain over abdomen and left side and passed bloody urine. Swelling was noticed in the left ilio-costal region; after about ten days hematuria subsided but the swelling had persisted up to the present examination.

Examination: Upper extremities negative; slight enlargement in the left ilio-costal region and tenderness on pressure.

Catheterization revealed an enlarged kidney on left side with a rotation of the axis of the pelvis to an anteroposterior position. As a result of the trauma sustained by the fall the kidney was thus displaced. The dislocated kidney may be seen, (Plate 1). Exploration advised.



PLATE I

This anomaly is due purely to trauma, one of the many that we find in doing routine urological examination.

### SURGICAL INJURIES OR ERRORS ASSOCIATED WITH OPERATIONS

*Case 2.* This illustrates two things: (1) errors in diagnosis and (2) useless operations.

History: White woman, age 36; admitted to University Hospital, April 13, 1924. Chief complaint pain in the right side, frequency and burning on urination. Four weeks previous to admittance patient complained of severe pains in the right kidney region. This had continued more or less since, with blood and at times sandy material in the urine. Pain radiated to the genitals and right leg. Patient has had these attacks for several years, but the real trouble was never located. Past history is extremely interesting. Eleven years ago patient had right ovary removed. Six weeks later on account of the same character of pain she was operated for adhesions, which resulted from the first operation. Three months later the gall bladder was drained. One year later, as pain still persisted, was operated on for adhesions,

—second such operation. One year later, or nine years ago, another operation for adhesions. Eight years ago had a partial hysterectomy, without a permanent cure. Three years ago patient had two convulsions, followed by marked uremia and sepsis, with headaches, dyspnea and some edema, and made a slow recovery. Two years ago patient had pneumonia.

Examination: Large woman, abdomen had three scars as a result of previous operations. Cystoscopic examination showed a low-grade inflammation over trigonal region and base of bladder. No obstruction found in either ureter. Left urine was normal. Right side able to aspirate pus. Functional test entirely negative on right. Normal on left. (*Plate 2*) Radi-



PLATE II

ogram made showing a stone in right upper calyx about one inch in diameter. Nephrectomy was performed. Results uneventful. The pathological report on kidney removed was a fibro-blastoma. From history this woman had at least six useless operations, all of which would have been avoided had a complete urological examination been made.

*Case 3.* Mrs. B. C. W., white woman, age 40; no history of pregnancies. Hysterectomy for fibroid tumor January 16, 1926. Following operation patient had rather a stormy time. A great deal of pain was noticed in the right lower ureteral region and up to the kidney. About thirteen days later a watery discharge was noted passing from the vagina. This was quite profuse at times. Later it contained a certain amount of pus, associated

with chills and fever. Patient was referred to us for urological diagnosis, which was as follows: Bladder capacity, four ounces; low-grade trigonitis and inflammation over base and lateral sides of bladder. Left ureter admitted a size five catheter with ease. The right orifice obstructed about one inch from the vesicle opening. Indigo-carmin functional test made. The dye appeared in left side in five minutes. None at all from right, but in fifteen minutes a bluish, watery fluid came through the vagina. Vaginal examination revealed a very small opening in the cervix, through which this material was passing. On account of the chills and fever and poor drainage, and the other kidney being perfectly normal, we advised a nephrectomy of the right kidney. Three days later we removed the right kidney, with an uneventful recovery. Pathological examination showed that considerable destruction had already taken place and we believe that we did the best thing for her future health. This is also one of the cases which we would class as surgical errors.



PLATE III

*Case 4.* (Very similar to Case 3). Mrs. J. B. T., age 39, white, septic and anemic in appearance. Temperature 101; BP, 162-108. Complained of pain in the right kidney region, frequency, nocturia and a foul vaginal discharge. Hysterectomy was done eight years ago. A short time following the operation a watery discharge was noticed from the vagina, which had not caused discomfort or pain until six months ago. About ten days ago she

began to run a daily temperature, accompanied by chills. Examination showed heart and lungs negative. Tenderness was felt over the right kidney and along the course of the ureter. Urethra was clear but small.



PLATE IV

Cystoscopic: Bladder showed a low-grade inflammation over trigonal region and base. Obstruction encountered two inches from the orifice of the right side. Catheter passed up the left with no ob-



PLATE V

struction. Indigocarmine functional test showed four and one-half minutes on left, nothing on right. Through the small opening near the stump of the cervix a watery, purulent discharge, slightly col-

ored, was noticed after about twenty minutes. We then passed a catheter No. 6 into the opening for about two inches, and aspirated 20 cc. of uro-purulent material. Upon digital examination a fluctuant mass was felt, which we thought to be a diverticulum associated with hydro-ureter. We cautiously injected 10 cc. of sodii iodide 15 per cent and made a radiogram which showed us that a portion of the fluid remained in the diverticulum and the remainder passed up through the hydro-ureter to the pelvis of the kidney, showing an enlarged kidney with dilated pelvis. We then passed the catheter up to the pelvis and aspirated 40 cc. of uro-purulent fluid, showing a suppurated condition of hydronephrosis.

A second radiogram was made, plates 4 and 5 showing beautifully the catheter in place and its tortuous course. The left kidney function and analysis was practically normal and the right kidney was markedly enlarged and was complicated by a hydronephrosis, hydro-ureter and diverticulum near the communication of the ureter at the stump of the cervix. The opening was insufficient for proper drainage, and the right vesico-ureteral orifice was entirely obliterated; consequently we advised nephrectomy.

This case is another anomaly due to surgical misfortune.

#### MECHANICAL OBSTRUCTION

*Case 5.* This case illustrates the type due to mechanical obstruction which may be caused by stones, tumors, angulations and strictures.

Mrs. D., white, age 23, married; referred to us May 26, 1926, complaining of pain in right kidney region and daily temperature.

Examination: Urine contained many pus cells; albumin, two plus.

Cystoscopic: Right ureteral orifice was inflamed and golf ball type. Catheter met an obstruction in upper third of right ureter. By the use of a stylet the catheter was introduced up to the kidney pelvis, and 30 cc. of uro-purulent material was obtained. A catheter was easily introduced up the left ureter.

Indigocarmine functional test showed on the left in four and one-half minutes, and six and one-half on right. Three cc. of fifteen per cent sodii iodide was introduced into each catheter and a radiogram was made, which showed a stricture about one and one-half inches below the uretero-

pelvic junction of the right kidney. (*Plate 6*) following two dilatations clinical symptoms disappeared.



PLATE VI

#### INFLAMMATORY TYPE

Chronic inflammation of the renal pelvis, calyces and ureters very often is followed by tissue changes such as thickening, sclerosis, contractures with partial or complete obliteration in one or more of the calyces. The following case will illustrate one of these types:

*Case 6.* White male, age 53; referred to us April 18, 1926, complaining of pain in the left kidney region. About four months previous had an attack of pyelitis, accompanied by chills, fever and pyemia.

Examination showed urine cloudy and acid, with a few pus and epithelial cells, and few bacteria.

**Cystoscopic Examination:** Left ureteral orifice was golf ball type; the right practically normal. Catheters were passed to both kidneys. Indigocarmin functional test was made showing on the right in five minutes, on the left in seven minutes. Pyelograms were made, which showed the right pelvis normal.

**Left:** The calyces and pelvis are dilated and distorted. There is a general irregularity of outline, clubbing and rounding of the ends of the calyces, also a predominance of the dilatation in the calyces rather than the true pelvis.

In pyelitis it will be found that infections predominant in the renal pelvis are usually accompanied by a considerable degree of inflammatory dilatation. Whereas,

infections predominant in the renal parenchyma usually cause but slight inflammatory changes in the pelvic outline. Condition is shown in *Plate 7*.



PLATE VII

#### CONGENITAL TYPE

The congenital conditions we have met with are polycystic kidney and bilateral hydronephrotic kidney, bilateral hydroureters with two ureters on left side. The polycystic kidney will not be discussed at length as we reported four cases of this condition in a former paper; (S. M. J., April, 1926.)

To illustrate the other type we have a very unusual case to present,—a dilated bilateral ureterovesical orifice with hydroureters, with two ureters on left side, or else a rudimentary kidney with its ureter extending downward and inserting into the larger ureter at the junction of the ureter and bladder.

*Case 7.* Mrs. O. H., age 19, white; came to us May 1, 1926. Married one and one-half years; no pregnancies; usual diseases of childhood.

**Family History:** Nothing of interest bearing on case.

**Present Illness:** Began eight years ago with pain in the left upper abdominal quadrant and back. Non-radiating; occasional nausea and vomiting, frequency of urination with passing of occasional clot-blood in urine.

**Examination:** Urinalysis,—color, dark and cloudy. Sp. Gr. 1013. Neutral reac-

tion. Trace of albumin. Some epithelial pus cells, with debris. Chest negative. In the abdomen there was a dull pain on pressure over the lower border of the ribs on the left side, in the region of the kidney.

Cystoscopic Examination: Urethra easily admitted the instrument. Capacity, two ounces. Mucous membrane somewhat congested at apex of trigone, due to a low-grade chronic inflammation. Right ureteral orifice somewhat enlarged and everted. Left, very much dilated, appearing about one-half inch in diameter and resembling opening of a diverticulum. Catheters introduced easily into each kidney. Upon making the kidney functional test the dye appeared from the right kidney in five minutes and from the left in seven minutes.

An X-ray plate was made; no stone was seen, but both kidneys enlarged.

With the ureteral orifices dilated as they were it was evident that if a cystogram was made it would be determined if the fluid introduced into the bladder would go to the kidneys. Four ounces of fifteen per cent sodii iodide was injected into the bladder. An X-ray was made (*Plate 8*)



PLATE VIII

which reveals hydronephrosis and hydro-ureter on the right side and a double hydro-ureter and nephrosis on the left. One ureter markedly enlarged. It is interesting to note the course of the smaller. At the uretero-vesicle junction it appears to pass under and upward to the uteropelvic junction, then backward to the upper pole

of the kidney, which appears to be double, smaller and posterior.

The important facts concerning this case are: That the urinary tract has no apparent obstruction to urinary outflow and no interference with the mechanism of urination. The bladder is markedly contracted. The ureters and pelvis are markedly dilated. There is no evidence of obstruction anywhere along the urinary tract. There are two hydro-ureters on the left side. There are at present slight signs of infection. The small ureter, as shown in plate may be extending from a rudimentary second kidney on that side. We advised an exploratory operation, which was refused. Therefore it is evident that no permanent relief may be given this patient.

These cases are fairly typical of the abnormalities given under the different classifications which are encountered and discovered by diligent urological application, assisted by the various means which are now at our command.

### THE PRESENT STATUS OF OUR KNOWLEDGE CONCERNING THE ETIOLOGY AND TREATMENT OF PERNICIOUS ANEMIA\*

LAWRENCE D. THOMPSON, M.D.  
ST. LOUIS

Before entering into a discussion concerning the etiology and treatment of this disease entity it is necessary to make clear what is meant by the term, "Pernicious anemia". There are many clinical conditions which give a blood picture similar to that which is typical of pernicious anemia, but a careful analysis of the case will usually suffice to reveal the true source of the anemia. Some of these conditions will be considered in more detail later, as the mechanism of the anemia occurring in them is at least partially understood. A review of these known hemolytic agents suggests possible factors for the production of the anemia in true pernicious anemia. This paper is devoted to a consideration of the clinical entity first accurately described by Addison<sup>1</sup> in 1849 and later by Biermer<sup>2</sup> in 1872. The clinical picture presented is quite definite, being characterized by a severe anemia, hemolytic in type, which varies quite mark-

\*Read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

edly in degree. In addition to the anemia there occurs an atrophic type of glossitis, an absence of free hydrochloric acid in the gastric contents and the presence of symptoms depending on degenerative changes in the posterior and lateral columns of the spinal cord. During the course of the disease marked remissions of symptoms generally occur.

#### ETIOLOGY

There have been many papers written on the etiology of pernicious anemia but in each paper, sooner or later, the admission is made that "the etiology of pernicious anemia is unknown". This statement is still true when using the term etiology in its narrow sense, meaning thereby the single specific cause of the disease. On the other hand, we do know quite definitely concerning a number of other etiological factors which play a part in the disease. Our knowledge of these factors offers considerable aid in determining the nature of the single specific cause of the condition.

Heredity has long been thought to play a definite part in the occurrence of pernicious anemia. Such a conception is based on the occurrence of the disease in two or more members of the same family, although the individuals lived at different times and under different circumstances. The disease has been reported as occurring in lineal descendants of a single family in two, three and even four generations. The hypothesis has been presented that a predisposition to the disease may be transmitted as a dominant mendelian trait. Barker<sup>4</sup> has discussed this question: "if so, why should not the familial incidence of pernicious anemia be more striking than it actually is? Ought not half or nearly half of all of the members of the family be affected?" In answer to these questions he mentions several possibilities: 1 Since the disease occurs only late in life many members of the family die before they have a chance to show the symptoms. 2 Many mild cases may be overlooked. 3 In addition to an inherited tendency to the disease, an "external" or "releasing" factor is essential to produce the symptoms. If heredity actually does play a part it seems most likely that this third explanation will prove to be the true one. Granted that a predisposition to the disease may be inherited we still have a difficult problem to solve. As Barker<sup>4</sup> also points out, in part: Does this predisposition consist in a con-

genitally deficient hemopoietic system or a congenital hyperactivity of the blood destroying organs? Are endocrine disturbances present which may upset the balance between blood cell formation and blood cell destruction? Is there a defective gastro-intestinal tract which allows the absorption of toxic material which would not be absorbed normally? Is there a congenital defect in the detoxication mechanism of the body, whatever that may be? However, although these questions are interesting, there is little actual evidence that heredity is an important factor in the etiology of pernicious anemia.

It is generally accepted that pernicious anemia is a disease limited to the white race and it rarely, if ever, occurs in the negro. Against this belief, however, is the statement by Jamison<sup>5</sup> that pernicious anemia occurs as frequently in the negro as in the white man. It is thus quite probable that race plays no important role in the etiology of pernicious anemia.

There is a very definite age incidence in this disease as the symptoms appear in middle life, most frequently between the ages of 40 and 70 years. It can be stated safely that having a case of severe anemia in a patient under 35 years of age, the burden of proof is on the man who calls it true pernicious anemia. This factor of age incidence suggests some very interesting hypotheses regarding the specific cause of the disease. This is the age of cancer. Possibly the abnormal cellular activity of the bone marrow may have a background similar to the abnormal cellular growth seen in cancer. This is also the age when oral infection is rife. Carious teeth, apical abscesses and chronically infected tonsils and sinuses are most prevalent. These conditions are favorable for the absorption of bacterial toxins from the upper respiratory and gastro-intestinal tracts. Due to the prevalence of poor oral hygiene, this is the age when proper mastication of food is frequently impossible and as a result of such conditions many patients are on diets which are highly restricted for mechanical reason. The hypotheses of vitamin deficiency, deficiency of certain essential protein fractions, etc., may be founded on such a basis. In short the etiological factor of age incidence is most clearly defined and very well may be a most important predisposing aid to the specific cause of the disease.

Many disease conditions have been re-

ported as predisposing or etiological factors in the production of pernicious anemia. Endocrine dyscrasias, especially those related to the thyroid gland and suprarenal bodies, have been thought to be of significance in this connection. It has long been recognized that myxedema may produce a blood picture similar to that found in pernicious anemia. In myxedema an achlorhydria may also be present together with abnormal sensations of pain in the extremities. Such a combination of symptoms strongly resembles the clinical picture of pernicious anemia. This disease has been reported as following typhoid fever<sup>6</sup> and various other acute infections. Association has been made with such conditions as renal insufficiency<sup>7</sup>, intestinal parasites and intestinal obstruction<sup>8</sup>. Such associations should all be considered as coincidental, however, as no one of these conditions occurs frequently enough in connection with pernicious anemia to establish any significant relationship.

In the analysis of the contributing etiological factors in pernicious anemia which we have just completed, there are two out-standing suggestions. In the first place a predisposition to the disease may be inherited. In the second place the age incidence lies between 40 and 70 years.

The pathological picture at autopsy, while generally considered to be rather disappointing and unsatisfactory does give three suggestions which are of great value. The characteristic findings at autopsy are:

(1) Evidences of blood cell destruction as indicated by enlargement and over-activity of the spleen, deposits of iron in the liver, spleen, bone marrow and other organs, over-activity in portions of the bone marrow and an icteric tint to the skin.

(2) Inhibition of hemopoietic activity as evidenced by fatty replacement of other portions of the bone marrow.

(3) Evidences of a general severe toxemia, indicated by atrophic changes in the gastro-intestinal tract, fatty degeneration of heart muscle and degenerative changes in the posterior and lateral columns of the spinal cord. Thus, judging from the pathology alone a single toxin could possibly produce the entire clinical picture for many toxins are known which are hemolytic and which inhibit marrow activity.

A comprehensive analysis and linking of symptoms gives us information similar to that obtained from the pathology. The par-

esthesias and other cord symptoms, the hemolytic anemia, the inhibition of hemopoietic activity, and the absence of free hydrochloric acid may all be caused by a severe general toxemia. The oral lesions and atrophy of the tongue may also be caused by toxemia, although many men have the opinion that these lesions are a contributing factor to the toxemia rather than a result of the toxemia. The presence of gastro-intestinal lesions in pernicious anemia has attracted much attention to the gastro-intestinal tract, and has led to exhaustive searches for the cause of the toxemia in this tract.

The laboratory findings of significance in this disease are numerous. The blood shows a severe anemia, hemolytic in type. There is an excess of bilirubin in the blood stream, and a low cholesterol content of the blood plasma<sup>9</sup>.

The urine shows nothing specific with the exception of an excess of urobilin which can be explained on the basis of abnormal red blood cell destruction. Gastric analysis shows an absence of free hydrochloric acid. While few cases of pernicious anemia have been reported where free hydrochloric acid was present in the gastric contents, it is the generally accepted opinion that free hydrochloric acid must be absent before the diagnosis may be made. Basal metabolic determinations and other tests to demonstrate endocrine activities have generally given no information of value in determining the etiology of this disease. Mackenzie<sup>10</sup> has pointed out that some few cases of pernicious anemia show a low basal metabolism and these patients improve under thyroid therapy. As has been mentioned before, myxedema may produce a severe anemia. It is possible that such cases as Mackenzie has seen have been cases of myxedema coincidentally associated with an achlorhydria. Bacteriological investigations have yielded many conflicting results. Since the time of Hunter there has been a group of investigators who believe that pernicious anemia is caused by a definite specific microorganism. Many organisms have been held under suspicion. The streptococcus, especially the green producing variety, has been isolated repeatedly from the tongue lesions, tonsils, teeth, mucosa of the gastro-intestinal tract and blood. Schneider<sup>11</sup> has recently brought the infectious theory to the foreground by demonstrating this organism deep in the muscle layers of the tongue in patients suffering from pernicious anemia. Schneider,

however, makes no claim that this organism is the specific etiologic factor in the disease. There are many other arguments supporting the infectious theory of etiology. The presence of oral lesions and gastro-intestinal disturbances for years preceding the onset of symptoms referable to the anemia, the evidence of a toxemia manifested by degenerative changes in the cord, etc., all indicate that the anemia itself is only a late manifestation of the disease. On the other hand, however, these organisms frequently found at autopsy and even during life, may merely be present as secondary invaders in tissues already damaged by some other unknown agent. Various other organisms have been recovered from the bone marrow, spleen and blood. These have all been in isolated cases, however, and an etiological relationship between the organism and the disease has never been established. A bacteriological search of the gastro-intestinal tract has revealed several organisms which are able, under certain conditions, to produce a toxin, hemolytic in power. The claim has been made for each of these organisms that it is probably the specific etiologic factor. Organisms which have received most notoriety in this respect are the Welch bacillus (12), strains of the colon bacillus (13) and strains of the monilia. The one convincing argument that no one of these organisms is the sole specific cause of pernicious anemia is the fact that they are all, more or less, normal inhabitants of the intestinal tract, and are present in many patients where no anemia occurs. It is quite possible, however, that as the result of some other primary cause, such as a change in reaction of the intestinal contents so that these organisms may occur higher in the intestinal tract than normally, or because of alterations in the permeability of the intestinal wall these organisms may lay a part in the hemolytic process. Investigations of the feces of patients suffering from pernicious anemia, aside from bacteriological studies, have been comparatively neglected. There is one fact, however, which is very evident and may be very significant. Stools of patients with pernicious anemia almost invariably demonstrate an abnormality in fat metabolism. This is shown by an excess of free fat in the stools. The fatty acid fraction is also generally increased. This observation may be explained in a number of ways. The diarrhea resulting from the absence of free hydrochloric acid in the stomach may cause such a rapid passage through the intestines that nor-

mal absorption of fat is prevented. The excess fat in the stool may be due to an excess intake of fat in the diet. Pancreatic lesions and deficiency in bile excretion may also cause an excess of fat in the stool.

In experimental animals the clinical picture of pernicious anemia has been produced in part by the administration or injection of many toxic substances. A large number of these substances probably never gain entrance to the human body and so need not be considered as possible etiologic factors. Tyramin<sup>14</sup> is one of the substances which can produce, in guinea pigs, a picture quite similar to pernicious anemia. This fact is of great interest because tyramin is probably present quite frequently in the normal intestinal tract. It has been isolated from protein foods and may thus be ingested along with such foods. In addition to this fact tyramin can be formed from tyrosin by the action of strains of colon bacilli. Tyrosin is an amino acid frequently present in the intestinal tract. It is thus conceivable that if tyramin is present in abnormal amounts, or if for any other reason the permeability of the intestinal mucosa is altered, this toxin may be absorbed into the blood stream. The toxins from colon bacilli and the Welch bacilli have produced severe anemias in experimental animals but the clinical picture of pernicious anemia has not been duplicated. In regard to the possibility of hemolytic bacterial toxins being absorbed from the intestinal tract, it is interesting to note some observations made by Muelengracht<sup>15</sup>. Muelengracht reported five cases of pernicious anemia in which a stricture of the intestine was found. No bacterial studies were made in these cases but experimental work by Seyderhelm, Lehmann and Wichels<sup>16</sup> offers a suggestion relative to such an anemia. By making a stricture in the lower parts of the ileum in dogs, they were able to produce a hemolytic anemia in a few of the animals used. Bacteriological studies revealed the fact that in the animals which showed an anemia the flora of the small intestine was similar to that of the colon. In the dogs which did not develop an anemia the flora of the small intestine was normal. This suggests the possibility that ordinary inhabitants of the colon such as *B. coli* and *B. Welchii*, may be factors in producing anemia when for some reason they occur higher up in the intestine. Under the heading of experimental anemia should be mentioned

the anemia produced by the dibotriocephalus ratus or fish-tapeworm. This anemia may be identical in appearance and characteristics with that of pernicious anemia. In these cases the hemolytic factor has been identified as the cholesterol ester of oleic acid. Cholesterol is the normal constituent of many body tissues and is found free in the blood stream. Fatty acids, such as oleic acids are absorbed by the normal intestinal tract daily. Bodansky<sup>17</sup> has shown that for some reason, as yet unknown, the distribution of free fatty acid in the blood is altered in hemolytic anemia. The concentration in the plasma is diminished while the concentration in the red cells is increased. The work of Bodansky as well as the work of many others indicates that the red blood cells take an active part in the metabolism of lipoids such as fatty acids, cholesterol and lecithin. It is therefore not hard to imagine that a disturbance in lipid metabolism may seriously involve such structures as red blood cells whose stroma is so largely composed of lecithin. In this connection Evans<sup>18</sup> makes the rather pertinent remark "it is suggestive, at least, to recall that the two tissues which contain more lecithin than any others in the body are the envelopes of the red blood cells and the sheaths of the nerves, and the two outstanding features of pernicious anemia are a hemolytic anemia and a diffuse sclerosis of the spinal cord." As Evans further points out, the spleen is also apparently involved in some way with cholesterol metabolism. This fact makes the lipid theory of etiology of pernicious anemia most interesting and suggestive.

The final line or direction of investigation in a search for the specific cause of pernicious anemia lies in the response of the patient to various types of therapy. The principal types of therapy at present are: (1) administration of hydrochloric acid; (2) transfusions; (3) arsenic, and (4) diet regulation.

The administration of hydrochloric acid relieves certain symptoms but does not alter the prognosis. Blood transfusion relieves the symptoms due to anemia but does not alter the course of the disease. Arsenic merely stimulates bone marrow and has a general toxic effect. The response of the patient to such therapy, therefore, throws no light on the specific cause of the disease.

The response of pernicious anemia patients to dietary treatment as administered during the past two years has been

most encouraging. While it is far too soon to claim the cure of a disease which is characterized by prolonged remissions the outlook is most hopeful. The principles underlying the diet in use are (1) low fat content; (2) high protein content, especially liver and sweetbreads; (3) fresh vegetables, especially those high in vitamins B C and E. Such a diet may exert its beneficial influence in a number of ways. The low fat may reduce the available unsaturated fatty acids and thus reduce hemolysis according to the lipid theory. It is well recognized, however, that the low fat element cannot be the sole beneficial factor. Liver is rich in nucleoproteins, phosphatids, etc. The liver also contains complex lipoids, such as cholesterol and lecithin. The vitamin content of liver is also high. In addition, liver probably contains a number of ferments or enzymes. There are so many factors concerned in liver therapy that further studies are essential before we can even speculate profitably as to the exact mechanism of the beneficial results obtained. Work now in progress in several laboratories may give us much valuable information before long.

In summing up the information available at the present time regarding the etiology of pernicious anemia, we learn: (1) from a study of the etiological factors that there is a definite age incidence of 40 to 70 years and that there may be an inherited predisposition to the disease; (2) from the pathology, symptomatology and experimental production of symptoms that the entire clinical picture may be produced by the chronic absorption of an hemolytic neurotrophic toxin which may be a bacterial product either from bacterial foci throughout the body or from bacteria in the intestinal tract, or may be a product of disturbances in lipid metabolism; (3) from the response of symptoms to therapy, that the greatest benefit is to be derived from dietary regulation. This last factor is a strong argument that the toxin is metabolic in origin and not infectious.

#### THE TREATMENT OF PERNICIOUS ANEMIA

The time honored method of treating anemias consists in the use of iron and arsenic. Iron being a constituent of hemoglobin, has been assumed to be lacking in anemia and its administration indicated. In certain types of anemia such reasoning is correct, but there is no evidence that lack of available iron plays any part

in pernicious anemia. On the contrary, there is probably an excess of iron available. Deposits of iron are characteristically found in the liver, spleen and bone marrow. There is no indication, therefore, in the light of our present knowledge, for administering inorganic iron in large amounts and thus adding to the digestive disturbances of the patient. It is important, however, to include in the diet foods which are comparatively rich in iron.

So far as we know, arsenic exerts its beneficial influence by stimulating the bone marrow and by its general tonic effect. If used discreetly and the dosage not pushed too high, arsenic does appear to aid somewhat in the treatment of pernicious anemia. The most convenient forms of arsenic to use are Fowler's solution and sodium cacodylate. Fowler's solution is familiar to every one and the dosage generally administered is 3 minims three times a day. The dosage is increased by one minim per dose each day until 10 minims per dose are given. Sodium cacodylate is given in 1 mgm. doses intramuscularly or intravenously two to three times a week for a series of ten or twelve administrations. A rest period of one week or so should then be allowed.

Because of the achlorhydria constantly present in pernicious anemia, the administration of hydrochloric acid is indicated and its use almost invariably benefits the patient symptomatically. The dosage varies from 40 to 60 minims of dilute hydrochloric acid three times a day. The mode of administration is important and a satisfactory method consists in giving 20 to 30 minims of dilute hydrochloric acid in buttermilk with each meal, followed by an additional 20 to 40 minims one-half hour after the meal. Gastro-intestinal and oral symptoms will usually improve to such an extent that frequently the patient decides it is no longer necessary to take the acid. It is probably very important, however, to continue the administration of acid indefinitely even in the absence of all symptoms.

Treatment directed at the spleen has been advocated by many men. The chief methods of attack have been by the use of X-ray and radium and by the surgical removal of the spleen. Transient improvement has occasionally followed such treatment, but it is generally agreed that the spleen is not the prime seat of the disease and that its removal does not materially alter the prognosis. At the present time

splenectomy is rarely, if ever, performed as a therapeutic measure in pernicious anemia.

Bone marrow stimulants other than arsenic have been used and are still advocated by some workers. Germanium dioxide<sup>19</sup>, while advocated by some men, in the hands of most workers has yielded discouraging results. Thorium "X"<sup>20</sup> and soluble radium salts<sup>21</sup> will stimulate the marrow, but are also toxic and their use is not generally advocated.

Many attempts have been made to sterilize the gastro-intestinal tract. The oral administration of a mixture of iodine, phenol and glycerin was used quite extensively twenty to thirty years ago. More recently dye therapy has been advocated and gentian violet<sup>22</sup> and other dyes have been tried. The rationale of such attempts is questionable. Assuming that the intestinal tract could be made sterile, would we not also lose the organisms which are almost essential to life?

Transfusion of blood has long been used in the treatment of anemia and in pernicious anemia it is still a most valuable method of therapy. Such a procedure will frequently carry a patient over a hemolytic crisis until a remission occurs. There are two general methods of administration of blood in use today, the so-called "indirect", or citrate method, and the "direct" method. Due to technical factors the indirect method is probably the safer one to use. The entire procedure can be accomplished by one man and less difficulty will be encountered if some unexpected delay should occur at any stage of the procedure. Reactions can be kept at a minimum if careful blood typing is carried out before the transfusion. Direct crossmatching should always be done as a check on the typing. Reactions may also be caused by the use of inadequately cleaned glassware and rubber tubing. The amount of blood given at any one time should not exceed 300 to 500 cc. The exact mechanism underlying the beneficial effect from transfusion is not entirely understood. The response is probably due to the combined effect of several factors. The mechanical addition of oxygen carrying corpuscles certainly relieves temporarily, the symptoms of severe anemia such as dyspnea. A so-called "megaloblastic crisis" is frequently observed following a transfusion or series of transfusions. This indicates that the transfusion either had a direct stimulating influence on the hemopoietic organs or else removed or neutral-

ized some previously existing inhibition of hemopoietic activity. In this connection it is interesting again to follow the speculation of Evans<sup>18</sup>. Kipp<sup>23</sup> has pointed out that following a transfusion there is only a transient increase in blood cholesterol. This indicates a prompt utilization of the cholesterol added by the transfusion. Thus assuming the lipid theory of etiology to be correct, it is conceivable that cholesterol may act as a neutralizing substance or antibody for the hemolytic agent. Thus, by rendering an appreciable amount of the toxin inert, temporary improvement is allowed. There may be other factors which play a part in the beneficial effects of transfusion, but little is known of the mechanism underlying them. It is thought by some that a series of three to four transfusions given in the course of several days will produce more lasting benefit than the same number of transfusions given over a period of several months.

The value of dietary treatment in pernicious anemia has been recognized for many years. Until recently the diets recommended have been chosen because of their protein and iron content and general nutritive values. The history of the role of diets in pernicious anemia will not be dwelt upon because of the lack of time. Whipple<sup>24</sup> and his co-workers have been chiefly responsible for our knowledge concerning the special value of particular food substances in the treatment of anemia. There is some evidence<sup>25</sup> that excess fat in the diet may be a contributing factor in the etiology of anemia. Koessler<sup>26</sup> and others have presented evidence indicating that certain vitamins are essential for blood cell formation. About two years ago, Minot and Murphy<sup>27</sup> incorporated these three principles just mentioned and introduced a special diet for the treatment of pernicious anemia. Quoting from their article, the diet for each day is composed as follows:

(1) From 120 to 240 gm. and even sometimes more, of cooked calf's or beef liver. An equal quantity of lamb's kidneys was substituted occasionally.

(2) One hundred and twenty grams or more of beef or mutton muscle meat.

(3) Not less than 300 gm. of vegetables containing from 1 to 10 per cent of carbohydrates, especially lettuce and spinach.

(4) From 250 to 500 gm. of fruit, especially peaches, apricots, strawberries, pineapple, oranges and grapefruit.

(5) About 40 gm. of fat derived from butter and cream, allowed in order to make the food attractive. However, animal fats and oils were excluded so far as possible.

(6) If desired, an egg and 240 gm. of milk.

(7) In addition to the above mentioned foods, breads, especially dry and crusty, potato, and cereals, in order to allow a total intake of between 2,000 and 3,000 calories composed usually of about 340 gm. of carbohydrate, 135 gm. of protein, and not more than 70 gm. of fat. Grossly sweet foods were not given, but sugar was allowed very sparingly.

Minot draws attention to the fact that such a diet is rich in iron and purine derivatives. He does not emphasize, however, that such a diet is also rich in vitamins, especially A B C and E, and that the fat intake is low. The adoption of such a diet in the treatment of pernicious anemia has been almost universal during the past year and encouraging results have been reported from many medical centers. In practically every experimental laboratory some one is trying to answer the question: why does liver aid in blood cell regeneration? The problem is being attacked from various sides. Is the reaction due to the vitamin content of the liver; to the presence of nucleo-proteins; to special enzymes or ferments as yet unknown, etc.? There is no answer as yet to these questions although work by Minot indicates that the same benefits may be obtained by the use of an alcoholic extract of liver which is iron-free and nearly protein-free. If this observation proves to be correct it would favor the belief that vitamins are probably the active factor.

A menu for such a diet may be made to be very appetizing and attractive. Various dietitians throughout the country have devised 30 or more different ways of preparing liver which vary from liver soup and liver cocktails to liver pie.

A final method of treatment which has been generally followed by most clinics but which has hardly been mentioned and certainly not emphasized is that which can be designated by the term oral hygiene. Infection must be removed and teeth restored before the patient can even take a rational diet. Regardless of the advice of the doctor the patient will drift back to a limited diet unless he can comfortably eat the type of food prescribed. There can be no successful treatment of pernicious anemia unless this fact is kept in mind.

In summarizing the treatment of pernicious anemia in outline form the following is suggested:

- (1) Restoration of the oral hygiene.
- (2) Administration of dilute hydrochloric acid.
- (3) Dietary regulation—low fat, liver, 200 gm. per day, fresh fruits and green vegetables. Total calories 2,000 to 3,000 depending upon the activity of the patient.
- (4) Transfusion if red cell count is below one million, five hundred thousand.
- (5) Arsenic in small doses if desired.

*Discussion*—Dr. Lea Riely, Oklahoma City.

It has always been a question in my mind whether pernicious anemia is a distinct clinical entity or not as we have so many factors operating on the blood stream in the act of either cutting down the erythropoietic functions of the bone marrow or the direct hemolytic devastation on the blood that gives the identical blood pictures of the so-called primary or pernicious anemia. It was my good fortune to see a copy of Addison's original monograph on pernicious anemia and he did not altogether separate it with the trouble caused by the deficiency in the secretions of the suprarenal glands.

The author of the paper has so clearly brought out the many theories of the etiology of this trouble and all seem to have some weak points in trying to explain this rather unique syndrome.

The achylia, the characteristic blood picture, the nervous system involvement, the icteric tint to the skin, the maintenance of the body fat but the extreme weakness in one person and not occurring in the other when the same cause is acting shows that there must be some individual or even familial factor operating in every case. The common knowledge of how certain liver troubles as of cirrhosis and certain endocrine disturbances are associated with the blood picture also muddles the waters for a satisfactory explanation.

Pernicious anemia has never stood in the limelight so much as it has during the last eighteen months since Minot and Murphy have given the most satisfactory treatment which has ever been used and hardly a magazine but what has added something to this weird bit of pathology.

We trust that they will be able to ex-

plain some definite etiological factor so we can feel safe in calling it a clinical entity.

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#### TREATMENT OF INDIVIDUALS VERSUS TREATMENT OF DISEASES\*

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That which follows is an humble effort to contribute something that might help us to more correctly visualize, in its true perspective, the relationship between doctor and patient. All have marvelled at the wonderful strides made in the scientific medical world during the past half cen-

\*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Muskogee, May 4, 5, 6, 1927.

tury. No other period in the earth's history has brought about greater advancement towards the mastery of disease processes. The most tangible proof of this lies in the well known fact that the average duration of human life has been prolonged some ten years, and many of the most deadly and dreaded diseases have become almost unknown. But a little reflection will convince most of us that the public in general is falling far short of receiving the full benefits from the work that has been done. In other words, the science of medicine is a long way ahead of its application. Medical knowledge is brought to the public largely through the medium of the private physician. The daily press and certain periodicals have, in some measure, diffused useful information, but the physician is the final authority on all matters pertaining to health and disease.

In all probability, one of the most outstanding faults with the practice of medicine today is this; it deals too much with diseases and diseases alone. These are treated instead of patients. It is, in a way, a sort of cross section method. And this method pervades its entire teaching, study and practice, from beginning to end. Text books nearly all deal with nothing but diseases. Lecture courses do the same. In the clinics, students are taught diseases as more or less separate entities—efforts usually being made to group large numbers of them together for observation and study. Later, in practice, the same ideas are carried out—the everlasting study and treatment of diseases.

Now medicine, in its true perspective, is based upon a fundamental knowledge of anatomy, physiology, pathology and therapeutics with the proper application of this knowledge towards promoting normal growth and development, preventing and curing diseases and prolonging life. In other words, its only aim and purpose is to relieve suffering and promote a higher state of human efficiency. Efforts in this direction are too much limited to the simple treatment of diseases. It is obvious that in order to accomplish, in the fullest measure, the above objective, it is necessary to considerably widen the field. We are reaching a stage where people expect and are willing to pay for a much broader and more comprehensive service on the part of the physician. This is possibly best exemplified in the specialty of obstetrics. Not so

long ago the doctor was never called until such a time as the woman was ready to deliver. It has now become an almost universal custom for the services of the physician to be sought practically as soon as pregnancy is suspected. His advice is desired throughout the period of gestation and people are willing to pay for it. And an analogous condition is spreading to other branches of medicine. People are gradually learning the value of placing themselves under the care of a competent physician and regularly seeking his advice as to their daily activities and methods of living. In other words, they are coming more and more to call upon physicians to treat and advise them as individuals rather than to simply expect to be healed of certain disease processes that may arise from time to time.

In no other branch of medicine can this idea of treating individuals rather than diseases be more effectively carried out than in pediatrics. The term, "specialist in diseases of children" will in due time, we hope, fall into discard. A pediatrician should no more be spoken of in such a way than should an obstetrician be spoken of as a "specialist in diseases of pregnancy." And no man who is merely qualified to treat "diseases of children" deserves to be spoken of as a pediatrician. We should remember that we are called upon to treat infants and children. It is true that if we are going to limit our work to patients belonging to a certain period of life we should be thoroughly familiar with the diagnosis and more or less expert in treating the ailments that are incident to that age. But the services rendered by a pediatrician must be much broader and much more inclusive than this. They must include measures for (1) promoting proper nutrition and development; (2) employing prophylactic means against diseases; (3) treating disease processes present and (4) employing every known method of preventing future damage or injury to the organism. Aside from any particular complaint or ailment for which the doctor is consulted every pediatric case always presents a variety of possibilities and potentialities. The greatest excuse for the existence of the pediatrician is the fact that he is more conversant with the potential conditions and better able to detect them by their earliest signs than is the man who does general practice.

To make the meaning of this more clear some of the commoner "potentialities"

will be mentioned. In the first place every infant is potentially rachitic. It is a pretty certain fact that well over fifty per cent of them develop this condition to some degree. This disease, although generally not serious, always interferes with proper growth and development. And still, it is largely due to the enterprising publicity of commercial houses that cod liver oil is used as widely as it is. Even this remedy in the dosage usually given, will by no means insure every baby against rickets. Constant watch should be kept for the early symptoms—sweating of the head, restlessness at night, constipation, and beading of the ribs. When these make their appearance the amount of cod liver oil should be materially increased or other anti-rachitic measures instituted. Diphtheria continues to take a toll of 10,000 lives in this country every year. Toxin-antitoxin is a safe preventive. The best time to administer it is at about the age of ten months. It is a pretty safe conjecture that the majority of people today first learn of this through some source other than the private physician. And quite a bit of uneasiness has developed in recent years on account of the neglect of vaccination against small pox and the consequent spread of the disease. Between three and six months of age is probably the best time to vaccinate against small pox. Few doctors so much as mention this to parents.

And so in the management of some of the most common and generally considered, most trivial ailments of childhood there are always possibilities of serious consequences that should be constantly kept in mind. One of the commonest childhood ailments is tonsillitis. It is so frequently seen that it is generally treated and dismissed without a second thought. And still, every case of tonsillitis in a child is a potential case of endocarditis or nephritis. Our duty has not been fully discharged to such a case until we have assured ourselves to a reasonable degree that there is no inflammation of the endocardium or kidneys.

Endocarditis deserves special attention because it appears to be playing an increasingly important role in our morbidity and mortality rates. A large percentage of these cases have a rather vague and obscure beginning in the early years of life but are not discovered until some time later. This is due to the slight significance that has been attached, by medical men, to certain potential cardiac con-

ditions occurring in childhood—a class of ailments referred to under the general term, rheumatism. At this age rheumatism does not necessarily mean swollen, red or painful joints with fever and other constitutional symptoms. It more often consists merely of rather vague, indefinite pains in the joints and muscles. Instead of dismissing such complaints as the traditional growing pains they must be looked upon as a really serious condition that may possibly result in a permanently crippled heart.

And we are constantly acquiring more useful knowledge concerning the earlier evidences of dysfunctions of the endocrines. It should be no longer necessary for these cases to become sideshow attractions before a diagnosis is made. Especially is this true of disturbances of the thyroid and pituitary. Recent observations make it appear entirely probable that numbers of these conditions are present and recognizable during early infancy—even at the time of birth in some cases. We now possess enough knowledge to permit of a checking up on the function of these glands, with a certain degree of accuracy, during the early years of life. If endocrine dysfunctions are to be remedied, it is obvious that early treatment will be the most effective.

Now only a few specific conditions have been mentioned—just enough to try to make clear the object of this discussion. More and more are we made conscious of the fact that a great many of the most important diseases of later life are, in actuality, childhood diseases. While not being discovered until well past adolescence or even in advanced years their beginnings can often be traced to the period of childhood. Such conditions as endocarditis, nephritis and tuberculosis come in this class. In a way this is a challenge to the pediatrician. He must do more than to simply calculate a few feeding formulae and employ measures to ameliorate the courses of the ordinary childhood diseases. He must treat patients—always being alert to the possible pathological conditions that may arise, forestalling these where possible or discovering them in their incipency and applying the remedy at a time when it will be most effective. It is quite probable that in the future the pediatrician, more than any other individual, is going to play the part of adding still more years to the average span of life as well as making those years more efficient and free from morbidity. And this

will be the work of the pediatrician—not simply the specialist in diseases of children.

### FACTORS IN ADVANCEMENT OF ORTHOPEDIC SURGERY

John Prentiss Lord, Omaha (Journal A. M. A., Aug. 27, 1927), reviews the evolution of orthopedic surgery. Naturally, he says, the advances in orthopedic surgery have been coincident with the development of general surgery, and its progress has been so rapid and spectacular that general surgeons were fully occupied by its major achievements. The status of orthopedic surgery in hospitals and in teaching institutions varies greatly. It is usually under the dominance of general surgery, and numerically the orthopedic surgeons are in the minority. There is great lack of uniformity in curriculums and great variation of custom in the distribution and assignment of cases to orthopedic departments. The newer and broader classification of orthopedic conditions includes fractures, osteomyelitis and joint diseases, all of which are prone to result in deformity and disability. One of the larger functions of orthopedic surgery is to prevent or minimize the latter conditions. Hence to accomplish these results such cases should be assigned to the orthopedic department on admission. Many orthopedic surgeons have reason to complain that too often their departments are but the dumping ground, the junk heap, for maltreated cases from general surgeons and general practitioners. An outstanding factor in the advancement of orthopedic surgery is that, in recent years, great interest in the cripple has been shown. Therefore, the cripple is the recipient of very special attention which has brought the cripple or the potential cripple to some of the organized agencies for his care. The particularly strong appeal of the crippled child has loosened the small as well as the large purse strings. All these and similar evidences of serious interest in the crippled child serve to advance orthopedic surgery. The organized agencies for the care of the crippled are so numerous and so active that very large numbers of cases have become available for clinical and teaching purposes. This command of material has done much to increase the experience and enhance the skill of orthopedic surgeons. At no previous times has so much attention been given to the welfare of children. State hospitals for crippled children early demonstrated the necessity for wholesale provision for the care of our large numbers of crippled and physically handicapped children, now estimated to number nearly one-half million. Not all states have made this provision, and even those who have, have not fully met the requirements. In some instances large bequests have supplemented state or community development of institutions for the relief, care, education and vocational training of crippled children. All this private and public interest in the cause of the cripple has been tremendously augmented by the assumption of the care of indigent crippled children and their temporary adoption by many organizations. Clinics for crippled children at state and county fairs and in connection with county and district medical societies, with the cooperation of the visiting nurses, increase the interest of all in the care and treatment of orthopedic cases and enhance the

practice of those in the orthopedic specialty. One of the reasons for a wider and more general improvement of orthopedic principles and practice is the fact that surgeons are becoming better orthopedists and orthopedists are becoming better surgeons. It is therefore, gratifying to note that much of our present-day progress comes from both our highly trained specialists in orthopedic surgery and our orthopedically minded general surgeons.

### BREAST FEEDING PROBLEMS

In the Portland Infant Welfare Clinics, breast feeding is especially emphasized. During the first three years of the clinics, among the 685 babies registered under 2 years of age, the mortality was 0.8 per cent, while the coincident city death rate for the same age group was 6.5 per cent. That the breast feeding period is too short in the majority of cases, as asserted by C. Ulysses Moore and Helen G. Dennis, Portland, Ore. (Journal A. M. A., Sept. 17, 1927), is demonstrated by the fact that in many communities not more than 15 per cent of infants are breast fed for nine months or more. The presence in breast milk of antibodies for human diseases merits more consideration. Increased emphasis on breast feeding reduces morbidity and mortality. The commonest breast feeding problems of the infantile period are hypergalactia and hypogalactia. Illustrative cases are given to indicate solutions. Establishing or reestablishing a flow of breast milk is often complicated by the infant's refusal of the breast. A breast feeding device called the breast feeder has been developed which enables a baby to obtain complemental food while nursing at its mother's breast. Parental and enternal diseases are more permanently cured by keeping a baby on the breast than by weaning it. A good rule to follow is that any mother who is well enough to care for her child is capable of nursing it.

### INHALATION TREATMENT

One of the simplest and most rational of the many applications available for the treatment of rhinitis, laryngitis, and other affections of the nose and throat resulting in congestion or swelling of the mucous membrane, is Adrenalin Inhalant, Parke, Davis, & Co. This preparation contains in a vegetable oil base Adrenalin in the same percentage as that contained in the standard aqueous solution—1 to 1000. The effects of Adrenalin Inhalant are prompt, but prolonged, for the reason that the Adrenalin is released slowly from the oil. Thus the patient gets a gradual and continued astringent action from the application of the Inhalant.

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The best instrument we have ever seen for applying Adrenalin Inhalant is what is known as the Glaseptic Nebulizer, made by Parke, Davis & Co.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol XXI JANUARY, 1928 No. 1

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

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PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

### EDITORIAL

#### THE RURAL PRACTITIONER

The growing scarcity of physicians in rural communities and a relative increase in urban centers has been noted as a matter of grave concern for several years. Various medical organizations have attempted to investigate the underlying causes and to adopt possible remedial measures. As conditions, as a rule, are very similar throughout the country, it is worth while for Oklahomans to begin to ponder the matter.

It is well known that there has been a

similar trend in Oklahoma, especially in the last fifteen years. The reasons for this are similar to those believed to exist elsewhere. These are:

A decrease in the number of medical schools, with a consequent decrease in students. In 1904 there were 28,000 students in 166 medical schools of the country, and 5,700 men were graduated. In 1919 there were a few less than 13,000, in 1922 only 2,529 men were graduated, the number of schools having fallen to 81. In 1926 there were only 79 schools, 61 of these being grade A colleges. In spite of this, students had increased to 18,840; graduates that year numbered 3,962.

Rapid transportation, made possible by better roads and the automobile, have undoubtedly been a great factor in the shifting of medical populations from small, unattractive towns to the larger centers. Small Oklahoma towns formerly having from one to three physicians, today have none, but except for urgent emergencies the needs of the community are fairly well met by the use of telephones and ease of access to the physician. It is pointed out in many localities only the older physicians will remain in the smaller communities, that they are rapidly disappearing, and their places are not being filled by younger men, who can see no great future or promise of much material success in such locations.

The cost and length of time of medical education has uniformly increased during the last decade and a half, and the younger man can hardly be criticised for refusing to locate in places inaccessible to the urgently needed laboratories, hospitals and consultation facilities which their training has convinced them are necessary, if they are to successfully apply the technic and knowledge they have gained at much cost of time and money. It has been suggested that medical education be somewhat curtailed to meet the conditions, that considerable of the research and technical phases now demanded of the student might be eliminated, and at the same time prepare him for most of the problems of a general practice. This has not met favor with educators or students, and probably will not. It is inconceivable that ambitious young men will accept any less than the best obtainable.

A few localities have tried, and report success, in the plan to guarantee a minimum fixed sum, but that is in the experimental stage. Apparently it must be con-

sidered sooner or later by communities finding themselves without proper medical service. The entire matter is surrounded by many complex problems; it is affected by many things, at first thought not connected with it. One authority is of the opinion that over-standardization and over-working so-called "efficiency" demands, is more than any other thing responsible. However, it is difficult to lay the blame upon any one condition, probably solution will be best met when it is understood that very diverse factors, educational, economic and sociologic, all have something to do with the growing scarcity of physicians in rural communities.

### *Editorial Notes—Personal and General*

DR. C. R. SILVERTHORNE, Woodward, spent two weeks of hunting in Old Mexico.

DR. B. H. BURNETT and family, Duncan, spent the Christmas Holidays in Texas.

DRS. J. E. and O. C. STANDIFER, Elk City, opened their new Hospital in December.

DR. L. S. MUNSELL, Beaver, was reported seriously ill in December from influenza.

DR. L. V. BAKER, Elk City, visited Kansas City for post-graduate work in December.

DR. T. B. COULTEER and MISS ELEANOR HOWARD, Tulsa, were married December 23, 1927.

DR. and MRS. C. T. CARAKER, Duncan, spent the Christmas holidays with relatives in Georgia.

DR. S. C. SUMMERS and MISS MINNIE MAY SWEETS, Tulsa, were married December 25 in that city.

DRS. M. B. GLISMANN, J. C. Rembert and A. B. Turk, Okmulgee, are preparing to open a clinic in that city.

DRS. RALPH V. SMITH and S. J. BRADFIELD, Tulsa, moved their office to 607 Medical Arts Bldg., Tulsa.

KAY County Medical Society heard a paper by C. W. Arrendell, Ponca City, on the subject of "Infant Feeding."

DR. S. R. CUNNINGHAM, Oklahoma City, and his two sons have returned from a mid-winter visit to Cuba.

LEFLORE County Medical Society elected Dr. E. N. Fair, Heavener, President and Dr. J. B. Wear, Poteau, Secretary-Treasurer.

ALFALFA County elected the following officers: Dr. G. G. Harris, Helena, President; Dr. L. T. Lancaster, Cherokee, Secretary-Treasurer.

DR. and MRS. W. P. FITE, Muskogee, entertained physicians and their wives of the U. S. Hospital staff with a quail dinner in December.

DR. and MRS. W. E. Rammel, Bartlesville, who have been residing in California for the past year have returned to their home in Bartlesville.

ANDERSON-CARSON-HUGHES Hospital was opened in December to the public under the management of Drs. R. M. Anderson, F. L. Carson, and J. E. Hughes.

OSAGE County is to have a full time health unit sponsored by the State, the County and by the Federal Government. Dr. A. R. Chism of Alabama has been selected as director.

DR. WALTER S. STEVENS, medical director of the Department of Indian affairs at Washington, D. C., is making investigation of health conditions among the Ponca and Otoe Indians.

PONTOTOC County Medical Society elected Drs. M. M. Webster, Ada, President; Alford R. Sugg, Ada, Vice-President; C. F. Needham, Ada, Secretary-Treasurer; and W. D. Faust and Cathrine Brydia, Delegates.

CRAIG County Medical Society elected Drs. C. F. Walker, Grove, president; W. M. Campbell, Vinita, Vice President; W. R. Marks, Vinita, Secretary-Treasurer; D. B. Stough, Vinita, Censor; F. M. Adams, Vinita, Delegate.

OKMULGEE County elected the following officers: Dr. G. Y. McKinney, Henryetta, President; Dr. V. W. Wallace, Morris, Vice-President; Dr. J. O. Lowe, Okmulgee, Censor; Dr. M. B. Glismann, Henryetta, Secretary-Treasurer.

BRYAN County Medical Society elected the following officers: Dr. R. A. Lively, President; Dr. R. E. Sawyer, Vice-President; Dr. James D. Shuler, Secretary-Treasurer; Dr. D. Armstrong and Dr. John A. Haynie, delegates; all of Durant.

OKMULGEE-OKFUSKEE County Medical Societies are hereafter held jointly, meetings alternating between Henryetta, Okemah and Okmulgee. Each County will retain its identity and separate organization but will meet together to stimulate more scientific interest.

JACKSON County Medical Society met at Altus, December 30. They heard a paper on "Confinement Work" by E. S. Crowe, Olustee; and "Immunization against Diphtheria and Scarlet Fever" by R. H. Taylor, Blair. Dr. Raymond H. Fox discussed the "Present System of Collecting."

PAYNE County Medical Society selected for the new year the following officers: Dr. L. A. Cleverdon, Stillwater, President; Dr. J. A. Martin, Cushing, Vice-President; Dr. L. A. Mitchell, Stillwater, Secretary-Treasurer; Censors, Drs. D. J. Herrington, Cushing; J. H. Cash, Stillwater, and J. B. Hudson, Yale.

OKMULGEE County Society met at Henryetta, January 9th. Dr. C. P. Bondurant, Oklahoma City held a skin and cancer clinic at Okmulgee in the afternoon, twenty-two cases being presented. The meeting was held in conjunction with members of the Okfuskee County Society. Thirty physicians were present.

OKLAHOMA County Medical Society elected officers at their annual meeting: Dr. A. B. Chase, Oklahoma City, President; S. N. Stone, Edmond, Vice-President; Dr. R. L. Murdoch, Oklahoma City, re-elected Secretary-Treasurer; Dr. C. M. Pounders, Oklahoma City, Library board; and Drs. R. M. Howard, E. S. Ferguson, and A. D. Young, board of censors.

TULSA County Medical Society were guests of the Oklahoma Hospital January 9th at 8:00 P. M., when Dr. W. J. Trainor was installed as President; Dr. Ralph McGill as Secretary-Treasurer, for the year. A very interesting program was presented jointly at the time by members of the Staff of the University Hospital of Oklahoma City and Oklahoma Hospital of Tulsa. The papers read will be published in later issues of the Journal. The following program was presented:

"Treatment of Colitis," Dr. DeLeon A. Williams, Kansas City, Mo.

"The Present Status of the Liver Function Test," Dr. Wann Langston of University Hospital Staff.

"Two Clinical Cases: one of Tetanus and one of Gas Bacillus," Dr. John F. Park, Oklahoma Hospital Staff.

"Deformities of the Lower Extremities: Lantern Slides," Dr. W. K. West, University Hospital Staff.

"Clinical Report of Sympathetic Ophthalmia," Dr. Walter A. Huber, Oklahoma Hospital Staff.

DR. C. T. HENDERSHOT, Tulsa, President-elect, was presented at the meeting.

## JAMES CHARLES WILLARD BLAND

### In Memoriam

The first graduate of a recognized medical college to locate in Tulsa was J. C. W. Bland, M. D. He was born in Centerville, Iowa, in 1859. Died in Oklahoma Hospital, Tulsa, January 2, 1928. For forty-three years he labored in this field. As a real pioneer he paved the way for progressive medicine. He was the first to do an amputation or a major surgical operation in this community, having borrowed the instruments from the late Dr. B. F. Fortner, Vinita, Okla. He was the first to use diphtheria antitoxin in Tulsa shortly after its introduction into the United States.

He read much, thought clearly and reasoned well while studying a case or caring for a patient. His knowledge was not confined to medicine; it extended to history, literature, politics, farming, stock raising, etc. When he cast his lot in Indian Territory he had to be a man among men to

command proper respect. He aided in making life safe and property secure.

No one was too poor to enjoy his services as readily as the well-to-do rich. He was loyal to his friends, honorable to his enemies and honest and upright in all of his dealings.

Dr. Bland was an ardent supporter of organized medicine and contributed much to the Indian Territory Medical Association. He was a member of the first Board of Medical Examiners for the Creek Nation during the life of the Board. Charter, and later honorary life member of Masonic Lodge No. 170, Sapulpa. He served over twenty-five years as a member of the U. S. Board of Pension Examiners at Tulsa. He was local surgeon for many years for the Frisco and Midland Valley Railroads.

His abiding faith in the principles of rational medicine and their application toward the relief or cure in illness or injury was an inspiration to young or old practitioners of medicine. Out of an abundant clinical experience his intelligent observation and marvelous memory often recalled interesting and instructive cases abounding in evidence of initiative and courage in meeting emergencies under the handicaps of pioneering in a new country without present day resources of counsel, hospital, laboratories, improved methods of travel, and communication, books, journals, etc. Dr. Bland was guide, counsellor and friend to all classes, colors and creeds in need of a physician. At his bier bowed alike, millionaire, banker, businessman, pauper, Indian, white, negro, physician, surgeon, lawyer, minister, judge, citizen, non-citizen, ex-outlaw, Protestant, Catholic, lame, halt, blind; in fact, all sorts and conditions of people sought to pay homage to his honorable memory.

In view of his high ideals of medical service and lofty sentiments of loyalty to patients, fidelity to friends and honorable conduct on all occasions, it is proper that we should spread upon our minutes an expression of admiration and friendship.

THEREFORE, Be it resolved that the Staff of the Oklahoma Hospital in regular meeting January, 1928, express their great appreciation of the work, worth and fellowship in seeding the ground in this part of the state for rational medicine by Dr. J. C. W. Bland, an honorary member of our staff.

The family has lost a valuable and reliable advisor and the poor, a friend in deed and in truth. The Staff of the Oklahoma Hospital, in expressing their grief at his loss, extend their sympathy to his family in their great sorrow.

BE IT FURTHER RESOLVED that a copy of these resolutions be spread upon the minutes, a copy furnished the Medical Press and transmitted to the family.

JOHN F. PARK  
J. C. SMITH  
WALTER A. HUBER  
FRED S. CLINTON

Committee.

**EYE, EAR, NOSE and THROAT**

Edited by Jas. C. Braswell, M. D.  
726 Mayo Bldg., Tulsa

**Localization of Foreign Bodies In or About the Eye., Mills, H. P., and Watkins, W. W.: Radiology, 1927, VIII, 336.**

Since the perfection of localization technique, ophthalmologists have been placed in a position of decided advantage in the treatment of foreign-body injuries of the eye. The ability to determine definitely the location of a foreign body, its size, its shape and, within limits, its nature, permits the proper treatment of such injuries early and has conserved the vision of many eyes which would otherwise have been lost.

Brief mention is made of the history and development of localization technique and some of the literature relating to it is summarized. Emphasis is laid upon the necessity for scrupulous exactness in the technique and mention is made of certain unavoidable sources of error. Localization by the Sweet apparatus has been found remarkably accurate.

In 500 consecutive cases examined by the author for suspected foreign bodies, roentgenography was found to be especially valuable in the following conditions:

1. Demonstrable intra-ocular damage with no foreign body found in or about the eye.
2. Old injuries without a recognizable wound of entry.
3. Extensive intra-ocular disturbances in which the ophthalmoscopic examination is of very little value.
4. Cases of non-magnetic foreign bodies, such as copper or rock, in which it is very essential to know whether there are intra-ocular particles, as the indications for enucleation or conservative treatment may depend on this information.
5. Cases of multiple foreign bodies blown into or about the eye. The treatment usually depends upon whether intra-ocular particles are present in one or both eyes.
6. Injuries in which the determination of the exact size, location, and shape of the foreign bodies furnishes the necessary indication for the route of extraction of magnetic foreign bodies or suggests the possibility of extraction on non-magnetic bodies by forceps.
7. Cases in which the foreign bodies change position, either unassisted or after the application of a magnet.
8. Cases in which there is doubt as to the nature of the foreign body which has entered the eye.
9. Cases with multiple foreign bodies of a magnetic nature.
10. Cases of extraordinarily large foreign bodies in which information relative to the size and shape may indicate the best route for extraction.

One or two illustrative cases of each group are cited and 146 of the 500 cases examined for foreign bodies are tabulated. A review of their work has led the authors to conclude that exact localization of foreign bodies is not only desirable, but so necessary to the intelligent management of most injuries of this type that the procedure cannot safely be omitted in any foreign-body injury to the eye.

**Malignant Tumors of the Nasal Sinuses: A Further Report on the Results of the Wide Open Operation Followed by Immediate Radiation., Barnes, H. A., Arch. Otolaryngol., 1927, VI, 123.**

The author reports his results in the treatment of malignant sinus tumors by a combination of operation and immediate radiation. This procedure is based on Moure's lateral rhinotomy with the addition of cutting away of the soft tissues of the cheek to leave a wide, permanent opening and immediate radiation to devitalize any particle of tumor that may remain.

The radiation treatment is given with 100 to 200 mgm. tubes screened with 0.2 mm. of platinum and 0.5 mm. of brass or with 2 mm. of lead. These are left in place for from 24 to 48 hours. All suspected sinuses are opened wide and thoroughly cleaned out. In every case of orbital involvement in which a clean removal of all gross tumor is possible, the eyes are left. Repair of the facial opening may be accomplished with comparative safety after a year of absolute freedom from suspicious recurrences.

Tumors of the nasal sinuses include all varieties of carcinoma and sarcoma. The epidermoid carcinomata are the most malignant. The basal-cell carcinomata are only mildly malignant and respond best to radiation. Only those cases are considered inoperable in which the presence of metastases is demonstrated.

The operative mortality is about 16 per cent. A cure is obtained in about 52 per cent of the cases.

**Nasopharyngeal Atresia., MacKenty, J. E., Arch. Otolaryngol., 1927, VI, 1.**

MacKenty first reviews the experience of others in the treatment of nasopharyngeal atresia.

The chief symptom of the condition is, of course, partial or complete obstruction of nasal breathing. Complete obstruction is rare. Nasopharyngeal atresia may be congenital or acquired. True congenital atresia is due to embryonic maldevelopment and not to inflammation. The acquired condition is caused by syphilis, trauma, diphtheria, tuberculosis, and simple inflammation. The diagnosis is usually easy. Congenital atresia is successfully treated by division and division of the obstructing diaphragm. In acquired syphilitic cases the prognosis is poor. In case of extensive atresia, those in which the whole pharynx is contracted to the center, the prognosis is almost hopeless. Non-operative treatment consists of gradual dilatation. Incision with subsequent dilatation to maintain the opening has given poor results.

The author outlines two methods that have been successful in his cases. In the first, adequate flaps from the posterior pharyngeal wall are doubled backward and upward upon themselves so that their own raw surfaces are brought against the raw surface of the soft palate. All sutures are tied over lead disks and through small lead tubes. In the second procedure the attempt is made to produce a cleft in the soft palate as far up toward the hard palate as seems necessary for a permanent opening. The latter method is used when an adequate flap from the posterior pharyngeal wall cannot be obtained. These operations are followed by dilatation to the necessary degree. The methods are shown by illustrations.

**Chronic Otitis Media in the Tuberculous: Local Ultraviolet Light Treatment.** Lussmann, F. J., and Bendove, R. A., *Arch. Otolaryngol.*, 1927, VI. 153.

In routine examinations the authors found chronic otitis media in about 15 per cent of all tuberculous patients. In about 80 per cent of these it was unilateral. Acid-fast bacilli were found in only three cases in which the sputum revealed many tubercle bacilli over a long period of time and were generally discovered during an acute exacerbation of the pulmonary disease.

Tuberculous otitis media has an insidious and usually painless onset. It is associated with a profuse, intermittent, creamy, and at times, foetid and bloody discharge and causes rapid impairment of hearing.

The rational treatment is stimulation of a healthy local tissue growth. This is best accomplished by mild and slow radiation with ultraviolet light from either the solar rays or the quartz light. Excessive radiation may do more harm than good. The dosage should begin at one minute a day and increase up to about 30 minutes in from one to five months.

### TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
912 Medical Arts Bldg., Oklahoma City

**Notes on Certain Bronchomycosis Which May Simulate Pulmonary Tuberculosis.** Aldo Castellani. *The American Review of Tuberculosis*. November, 1927.

There are certain symptoms common to all bronchomycosis whenever fungus is the etiological factor. In mild cases there are types of mild bronchitis with mucopurulent expectoration in which the fungi are found. In severe cases the patient presents symptoms suggesting tuberculosis with hectic fever and hemorrhagic expectoration. Most bronchomycosis are benefitted by the administration of potassium iodide. The prognosis varies a great deal according to the causative fungus—the cases due to nocardia (filamentous fungi) have the most favorable prognosis.

**The Clinical Manifestations of Pneumonomycosis.** Louis Hamman. *The American Review of Tuberculosis*. November, 1927.

Fungus disease of the lungs may stimulate any of the sub-acute or chronic pulmonary affections; but it is more commonly mistaken for tuberculosis than for any other condition and this gives it a special interest for physicians occupied principally with the diagnosis and treatment of pulmonary tuberculosis. While secondary invasion of the lungs by fungi is not uncommon and lung nodules are frequently found in generalized fungus infections, nevertheless, mycosis of the lungs as a primary and independent affection is a rare disease, especially in this country.

Among the moulds, penicillium, aspergillus and mucor are the three varieties of clinical interest. Penicillium is probably always a saprophyte and takes no part in altering the course of the pulmonary disease with which it is associated. Aspergillus and mucor often invade the lung tissue and by their growth produce extensive an-

atomical lesions and no doubt add important clinical symptoms to those caused by the primary disease. Such invasion has been found chiefly with tuberculosis. Clinically, aspergillus is indistinguishable from tuberculosis. It begins with cough, hemoptysis, and fever. The disease is very chronic; it may last for many years and end in a condition of extreme fibrosis.

Mucor is nearly always a secondary invader and is usually associated with tuberculosis.

Sporothricosis is not an unusual infection in the United States. The disease usually begins as a local lesion following an abrasion or cut. From this lesion it spreads locally and may later metastasize to the internal organs. The pulmonary lesions are similar to those in the skin, and produce the clinical picture of broncho-pneumonia.

Infection with blastomyces is rather common in this country and usually begins with symptoms of a severe cold, namely, cough, expectoration (sometimes bloody), fever and other constitutional symptoms. Dullness, altered breath sounds and rales are often present; and since the lesions are often in the upper lobes, similarity to tuberculosis is complete. Pleural involvement is also frequent. The diagnosis can be made only by finding the microorganisms in the sputum or when subcutaneous nodules and abscesses appear.

Infection with *Coccidioides immitis* produces pathological lesions resembling tuberculosis still more closely and equally deceptive clinically. About 50 cases have been reported, nearly all of them occurring in California. The disease is more malignant than blastomycosis and usually its local lesions are promptly followed by systemic invasion. In many instances it begins as a pulmonary infection and the picture is typical of pulmonary tuberculosis. Pleural effusion is common. There is cough, bloody sputum, fever, loss of weight and weakness. The streptothrix is the most common and most important of fungus invaders of the lungs—not only do the lesions they produce resemble tuberculous lesions, but the microorganisms themselves are closely related, biologically, to the tubercle bacillus. For streptothrix to gain a foothold in tissue trauma is necessary, and infection usually occurs in association with the introduction of a foreign body. The skin, mucous membranes, bones and lungs are the usual sites of disease. The streptothrix is present, not infrequently, as a saprophyte in the mouth and far-reaching conclusions must not be drawn from only the presence of microorganisms in the sputum.

Actinomycosis is the best known of the pulmonary mycoses. Primary disease of the lung is not uncommon. The chief distinguishing features of the condition are massive fibrosis and extensive pleural involvement leading generally to perforation of the chest wall.

**Fuso-Spirochaetal Disease of the Lungs.** David T. Smith. *American Review of Tuberculosis*, November, 1927.

Clinical, bacteriological, pathological and experimental studies indicate that pulmonary gangrene, most cases of pulmonary abscess, certain types of unresolved pneumonia and bloody bronchitis, putrid bronchitis and primary bronchiectasis, are not separate disease entities but only different manifestations of infection with a specific group of anaerobic microorganisms.

Spirochaetae, fusiform bacilli, vibrios, and cocci have been found constantly present: (1) In the gums of patients suffering with these infections; (2) in the washed pulmonary sputum; and (3) in pulmonary tissue at necropsy. When material scrapped from the alveolar border of the teeth in cases of moderately severe pyorrhea was introduced into the trachea of anesthetized mice, guinea pigs and rabbits, a variety of pulmonary infections resulted which resembled very closely the acute and chronic manifestations of fusospirochaetal disease in man.

Treponema microdentium, treponema macrodentium and two types of fusiform bacilli have been isolated in pure culture from the washed pulmonary sputum.

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Campbell, W. C.: The Stabilization of Paralytic Feet. *Am. J. Surg.*, 1927, III, 62.

The operation which is the subject of this article has become generally known among orthopedic surgeons as Campbell's bone block. It is done to prevent foot-drop from infantile paralysis and other causes. The technique is as follows:

The posterior aspect of the astragalus, the ankle joint and the superior surface of the os calcis are exposed through an incision parallel with the tendon of Achilles. If the tendon is contracted, a tenotomy is done. The posterior wall of the astragalus is chiseled off and a cavity chiseled out of the top of the os calcis. A bone graft from any part of the skeleton, preferably of spongy bone, is then sunk in the cavity and allowed to project upward behind the ankle joint. Chips of bone from the os calcis are piled on top of the graft, the mass being built up behind the articular surface of the tibia. The soft tissues are then sewed snugly over the bone fragments and the foot is put up in a plaster cast at 90 degrees.

This operation differs from all for the same purpose in that no suspension of the foot by tendons or silk ligaments is attempted.

In the past five years Campbell has performed it in 213 cases. When necessary, the calcaneo-astragalar joint was fused to correct lateral deformity of the foot. In some cases it is necessary to fuse also the calcaneocuboid joint. After such fusion operations, the denuded bones should be approximated snugly together to prevent the formation of dead spaces. After three weeks it is wise to remove the cast and to determine by roentgenogram whether the bones are in close apposition. If they are not, they can still be forced together under anaesthesia and a new cast applied.

The indications for the operation are: simple foot-drop; partial foot-drop, in which the mid-tarsal joint is usually stable; rigid equinus; equinovarus; equinovalgus; flail-foot, in which it is indicated as an adjunct to stabilization of the mid-tarsal joints; tendon transplantation, especially of the extensor longus digitorum to the tarsal region; and spastic contracture of the tendon of Achilles. It is seldom indicated before the eighth year of age.

Of 104 children treated by this method, 76 were re-examined. Of the latter, 71 showed the bone block effectively preventing plantar flexion.

Failure of the operation may be due to too early discarding of the cast, trauma to the tibia causing union of the graft with that bone and resulting in stiffness of the ankle, and tetanus

infection in children who have gone barefooted.

Of 109 adults subjected to the procedure, 86 were re-examined. A successful result was found in 83.

The result of the operation is considered definite in six months. In some cases in which the roentgenogram showed sufficient bone growth the block was not effective because of incomplete union or union with wrong contract.

As is true of all other operations for paralytic feet, the chances of success increase with the patient's age.

The advantages of the author's operation are that it is simple, all braces may be discarded, muscle power is conserved, the prevention of overstretching may induce the return of power in the anterior muscles, and the rocker motion of the ankle joint is conserved.

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Fractures and Dislocations., Hansson, K. G., and Birrell, R. G.: The After-Treatment of Fractures About the Elbow. *Am. J. Surg.*, 1927, III, 13.

Of 828 fractures treated at the Hospital for Ruptured and Crippled, New York, 100 involved the elbow. Fourteen of these required open reduction. In five, there was nerve involvement; in two, myositis ossificans; and in one case, a complicating arthritis.

The method of acute flexion for fresh fractures about the elbow is now so well known that few doctors hesitate to treat such fractures. The after-treatment, however, is little understood.

Of the patients whose cases are reviewed, about 50 per cent did not come for after-treatment until a month after the fracture. Such delay renders prolonged treatment necessary. In the cases of patients coming for treatment during the first three weeks, the average number of treatments required was 12.5, whereas, in those patients coming after a month, the average number was 23. The final functional result is better the earlier the after-treatment is begun.

The after-treatment should begin as soon as swelling, pain, and muscle spasm have disappeared, usually at about the end of the second week. It should consist in the use of external and internal heat, massage, and exercise.

In the author's cases heat is first applied in the form of a hot whirlpool bath. After a week of this treatment, dry heat is applied by means of a carbon filament lamp with a reflector.

Diathermy also is used, either with an electrode on each side of the elbow or with one above and one below the elbow.

Massage is important. It stimulates the circulation, aids the flow of lymph, and releases adherent tissues. A proper touch is preferable to great strength. The patient should be in the recumbent position during all massage treatments. If the massage causes a protective muscle contraction, it is too vigorous.

Active therapeutic exercises are begun after the first week. Passive exercises, especially when forceful, are unphysiological and have no place in the treatment of elbow fractures. After active motion has been well started, it is done against resistance. Finally, the patient does exercises on apparatus, using his body weight as resistance.

From a practical standpoint, treatments can usually be given once a day or every other day; that is, about one hour of exercises and treatment in 24 or 48 hours. However, as soon as im-

mobilization is dispensed with, the patient can carry out the exercises every three hours at his home.

Massage around the callus is contra-indicated because it may produce excessive callus or even myositis ossificans.

Even when the best methods are used, the results are poor in about 10 per cent of elbow fractures.

### BOOK REVIEWS

**RADIUM IN GYNECOLOGY**, by John G. Clark, M.D., and Charles C. Morris, M.D., with a chapter on Physics by Giacchino Failla, E. E. M. A., D. Sc. Illustrated—\$8.00. Lippincott Co.

The authors of this book are recognized authorities on the subject of the use of radium in gynecology. This monograph differentiates those cases which are suitable for irradiation. The diagnosis, symptomatology, method of treatment, mortality, morbidity, and end results as well as an extensive view of the literature pertaining to the various gynecological conditions for which radium is employed is comprised in this volume. The authors have adopted a conservative attitude regarding the use of radium and evidently feel that radium is an adjunct and not a competitor to surgery. In certain conditions irradiation is clearly the treatment of choice, as in certain cases of benign uterine hemorrhage; in others such as carcinoma of the fundus, surgery gives better end results. The general impression of the monograph is that of a carefully prepared, unbiased analysis of the use of radium in gynecology. This book is, we believe, the only monograph on the subject in English and is probably the most important one yet published on this subject. The chapter on the physics of radium has been written by Failla of the Memorial Hospital, New York, who has apparently especially prepared it for the average surgeon and physician. This chapter is a masterly portrayal of the physics of this remarkable element. The book is freely illustrated and the publishers are to be congratulated upon the fine appearance of the volume. This book should be of interest to every gynecologist, surgeon, X-ray man, as well as to the general practitioner who wishes to keep up with modern methods and to secure the best form of treatment for his patients.

**DISEASES OF THE STOMACH**; Diagnosis and Treatment of Diseases of the Stomach, with an introduction to Practical Gastro-Enterology. By Martin E. Rehfuess, M.D., Assistant Professor of Medicine at Jefferson Medical College. Octavo volume of 1236 pages with 519 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$12.00.

This volume contains sixty chapters covering practically every phase in diagnosis and treatment of the diseases of the stomach, anatomy, physiology, gastric secretion, analysis, X-ray examination occupy much space while the treatment of various disorders is thoroughly considered. Naturally a great deal of space is devoted to ulcer of the stomach. Duodenal ulcer and malignant ulcer are well covered, while sixty-two chapters are devoted entirely to cancer of the stomach. The surgery of the stomach is presented by one of the masters of surgery, John B. Deaver, in a forty-five page illustrated section.

**DISEASES OF THE MOUTH**, by Sterling V. Mead, D.D.S., Professor of Oral Surgery and Diseases of the Mouth, Georgetown Dental School; Oral Surgeon to Georgetown Hospital; Dental Surgeon to Providence Hospital; Consulting Oral Surgeon to Casualty Hospital; Dental and Oral Surgeon to Shady Rest Sanatorium, etc. Washington, D. C. With 274 original illustrations in the text and 29 full page color plates. 578 pages, \$10.00. C. V. Mosby Company, St. Louis. 1927.

The author had clearly in view in preparation of this book the growing need for more intimate cooperation by the dentists and physicians in the handling of the intricate problems of oral sepsis and affections of the mouth and many other serious conditions which arise as a result of oral infection. While a great deal is devoted to prophylaxis, medicine and chemistry, naturally much of it falls under the head of surgery. The cuts and illustrations are all original and are unusually attractive. The subjects of fractures and injuries, tumors and cysts will appeal to every surgeon.

**AFFECTIONS OF THE STOMACH**, by Burrill B. Crohn, M.D., Associate Attending Physician to the Mt. Sinai Hospital, New York City. Octavo of 902 pages with 361 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$10.00 net.

This volume is an unusually good presentation of the problems surrounding Affections of the Stomach. There are fifty-two chapters which include consideration of the anatomy, physiology, mechanism, test meals, radiography, functional and organic disorders. Gastro-duodenal ulcer is given a great deal of space. Medical treatment is thoroughly entered into, while the surgical treatment is considered in two chapters by A. A. Berg.

**NERVE TRACTS OF THE BRAIN AND CORD—ANATOMY—PHYSIOLOGY—APPLIED NEUROLOGY**, by William Keller, F.R.C.S., Ed. Professor of Anatomy and Applied Anatomy, University of Texas. Illustrated. Cloth. MacMillan Co., 1927. New York.

The author states this book on the Nerve tract and Cord is a result of 20 years experience in teaching anatomy of the Brain and Cord as to enable students to think in terms of anatomy, physiology and pathology, as applied to the nervous system. The volume should be interesting to those dealing with neurological subjects.

**MANIFESTATION OF UREMIA IN PHARYNX, LARYNX, TRACHEA AND BRONCHI**

Eleven cases showing a peculiar doughlike coating on the mucous membrane of the hypopharynx, larynx, trachea or bronchi have been observed by M. C. Myerson, New York (Journal A. M. A., Aug. 27, 1927). This phenomenon appears during the stage of the onset of uremia in those cases in which it makes its appearance. It may occur in the oral cavity, pharynx, larynx, trachea or bronchi. It may occur in only one or all of these structures. The esophagus is also probably involved in some instances, but was not investigated. When seen early, this coating is diagnostic of an impending uremia. The presence of this coating in the trachea and bronchi may lead to physical signs which are mistaken for those of bronchopneumonia.

## METAMORPHOSIS OF TUBERCULOUS LUNG CHANGES AS OBSERVED IN SERIAL ROENTGENOGRAMS

Frank S. Bissell, Minneapolis (Journal A. M. A., Sept. 17, 1927), expresses the belief that the accepted management of active pulmonary tuberculosis requires an indeterminate sojourn in a sanatorium. Apparently serious attempts are not made to select sanatorium cases except on the basis of their state of advancement. Yet many cases never advance beyond the minimal stage, even when untreated. While it is not always possible to select these cases at the first examination serious risk is not encountered by keeping them under observation, with periodic roentgen-ray examinations, until they can be properly classified. The more general adoption of this procedure would avoid an unnecessary economic loss to the individual as well as to the community. The periodic roentgen-ray examination of the tuberculous lung may be made to serve an important function in the differentiation of pathologic changes indicating a tendency toward arrest or progression. More accurate prognosis may be attained through the agency of roentgenologic studies directed toward the recognition of such changes as fibrosis, calcification, cavitation, caseation and the tendency toward the isolation or dissemination of lesions. Tuberculous lesions, in themselves, do not present macroscopic or radiologic characteristics by which they can invariably be differentiated from lesions caused by certain other infections. Often, however, the distribution of the lesions within the lung field is distinctive. The periodic roentgen-ray examination, through which it is possible to observe the metamorphosis of questionable lesions, serves not only to differentiate them as to etiology, but also to determine or to measure the effects produced on the surrounding lung or the resistance of the host to the infectious agent. Lesions which remain essentially unchanged for months or years should not be permitted, by too much coddling, to convert a comparatively healthy host into a chronically neurasthenic individual. A true tuberculous cavity is always dangerous, but it is much less to be feared if it has a thick wall and is surrounded by fibrotic lung tissue. Lesions which appear and disappear in various parts of either lung field point to low virulence or high resistance and if they do not increase in number or area should be accepted as relatively benign. Many patients with tuberculous lesions in the lungs showing slight signs and symptoms of activity may properly be kept under home and vocational management if they are carefully controlled by periodic roentgen-ray examinations.

## SMALLPOX AND CHICKENPOX

The difficulty of differential diagnosis of smallpox and chickenpox has increased in recent years, because widespread vaccination of the population has reduced the opportunity to see cases of smallpox. Suggestions to aid in such differential diagnosis, and recorded in The Journal recently, are those of Hulshoff Pol, Jaksen-Wartenhorst, Sahli and Painton. J. W. Tomb, chief sanitary officer of the Asanol Mines board of health, Bengal, India, has noted that the time interval between the date of onset of fever and the date of outbreak of eruption is dependably significant. In the mining settlement of Asanol the colliery doctor babus were reporting all cases of sickness

with vesicular eruption as chickenpox, although it was known that for many years smallpox had caused severe economic loss in the province. To remedy the resulting inaccuracy, an order was issued to report all cases of sickness with vesicular eruption as "smallpox" and to give, in addition, the dates of onset of fever and of outbreak of eruption. Analyses of many hundreds of such reports showed that in chickenpox the time interval between the onset of the fever and the beginning of the eruption never exceeded twenty-four hours, while in smallpox this period always exceeded forty-eight hours. Proof that this distinction is important was obtained in 1925-1926, when smallpox was epidemic in Bengal. At that time 65,795 of the inhabitants of Asanol were revaccinated, with success in 77 per cent. Ninety-four persons who had had chickenpox, as diagnosed by the time interval method, were also revaccinated with success in 75 per cent. In the cases of 108 persons who had suffered from a disease diagnosed also by the time interval method as smallpox, revaccination was unsuccessful. This method of diagnosis would not be dependable in that alleged form of mild smallpox called alastrim, in which a vesicular eruption occurs without fever or malaise. However, as Tomb points out, if such cases do occur they are without importance in public health work as they do not cause either morbidity or mortality. In his hands, differential diagnosis by the method outlined has proved "simple, accurate and unambiguous."—Jour. A. M. A., Aug., 27, 1927.

## FATALITY FOLLOWING VARICOSE VEIN INJECTION

O. A. Olson, Minneapolis (Journal A. M. A., Aug. 27, 1927), cites the case of a woman who, five days after receiving an injection of salt solution and calomel for varicose veins, fell dead. The postmortem diagnosis was varicose veins; phlebitis and thrombosis of the right internal saphenous vein, and pulmonary embolism.

## BILATERAL DIAPHRAGMATIC PLEURISY SIMULATING PERFORATED GASTRIC ULCER

In the case reported by George L. Carrington, Durham, N. C. (Journal A. M. A., April 30, 1927), the abdomen was explored with a preoperative diagnosis of perforated gastric or duodenal ulcer; ten days later a postoperative diagnosis of bilateral diaphragmatic pleurisy was established.

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# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLA., FEBRUARY, 1928

NUMBER 2

## THE PRESENT STATUS OF LIVER FUNCTION TESTS\*

WANN LANGSTON, M.D., F.A.C.P.  
OKLAHOMA CITY

In recent years a great deal of thought has been given to the functions of the liver, with the result that much new information is at hand. A considerable literature has appeared. Numerous tests have been devised. Some misinformation has been given out. Harm may be done unless we pause to evaluate carefully the knowledge we now possess.

The liver is the largest gland in the body; it is a gland of multitudinous functions; its functions are intimately associated with the vital processes of metabolism; the liver has great reserve power; it possesses remarkable ability to regenerate; and finally it is inaccessible for direct observation, experimentation or clinical investigation.

### FUNCTIONS OF THE LIVER

The functions of the liver may be summarized as follows:

It is the sole organ of bile excretion.

It is the only organ that forms and excretes bile salts.

It produces and eliminates cholesterol.

It has to do with iron metabolism.

It excretes various foreign substances, as dyes.

It possesses powerful detoxicating functions, destroying or rendering inert bacterial products from the intestinal canal.

It has to do with the formation of fibrinogen and helps to regulate coagulation of the blood.

It possesses the so-called pretopexique function, removing noxious proteins from the portal blood.

It is a storehouse for some of the fat taken in as a food.

It plays an important role in protein

metabolism, probably the only site of urea formation.

It is the great storehouse for carbohydrates, delivering them to the various parts of the body upon call, thereby regulating the blood sugar level.

These various functions are unrelated to each other. Any one function may be impaired, or any combination. It is therefore, apparent that no one test can be devised that will indicate an impairment of every function. Because of the great reserve power a lesion must be diffuse, or, if circumscribed, must be very extensive, before any test will give a positive result. Hence, as in all other laboratory tests, negative findings are not conclusive.

I shall outline briefly a few of the many tests that have been recommended, and attempt to make a clinical application of them.

### THE GLYCOGENIC FUNCTION

When carbohydrates are ingested they are broken down in the intestinal tract to monosaccharids and absorbed as such. The liver synthesizes this glucose to, and stores it as, glycogen. When moderate amounts of carbohydrates are taken, the excess is rapidly removed from the circulating blood, and the blood sugar maintained at a normal level. When the glycogenic function of the liver is interfered with hyperglycemia follows the taking of sugars, and glucose appears in the urine. A number of tests have been tried to determine this derangement of glycogenic function. The so-called sugar tolerance test will show this, but a large number of other conditions will give a similar reaction, such as carcinoma, tuberculosis, hyperthyroidism, etc. A very simple test was described by Bauer of Vienna, namely, the galactose test. Forty grams of galactose are given in the morning to the fasting patient, and the urine collected for six hours. The finding of more than two grams of the sugar in the urine is taken to indicate deficient glycogenic function.

\*Read before the Tulsa County Medical Society  
January, 1928.

### PROTEIN METABOLISM

In the processes of protein metabolism ammonia is formed. The liver changes the ammonia to urea, which in turn is excreted by the kidney. When the ureagenic function of the liver is interfered with, the ratio of urinary ammonia to urinary nitrogen is high; and the ratio of blood urea to total non-protein nitrogen in the blood is low. This has been noticeably true in the cirrhoses and in the toxemias of pregnancy.

### FUNCTION PTOTEOPEXIQUE

The liver removes from the portal blood certain noxious substances that enter it after a protein meal. When there is liver disease there results a post-prandial leucopenia, lowering of the blood pressure, lessened coagulability of the blood, etc. This phenomenon was described a few years ago by Widal, who designated it as a hemoclastic crisis. The test is simple and easily carried out. A leucocyte count, blood-pressure, etc., are taken on the fasting patient. He is then given a glass of milk and the tests repeated at fifteen minute intervals. Normally, there is a rise of leucocyte count, increase in blood-pressure, etc., which falls to normal within one and a half hours. If there is liver disease, just the reverse reaction will be observed. Unfortunately, the value of the test is minimized by finding positive reactions in many cases in which liver pathology cannot be demonstrated.

### DYE EXCRETION

In the last two or three years considerable importance has been attached to the fact that normally, certain dyes are excreted by the liver, and that in liver disease their excretion is delayed. Several dyes have been used in the work of Roundtree, Rosenthal, and others. Perhaps the most satisfactory is Bromsulphalein. This is injected intravenously in the dosage of two milligrams per kilo of body weight, and the percentage of retention in the serum determined colorimetrically at intervals during the next hour. Normally, practically all of the dye has disappeared from the blood at the end of thirty minutes. When there is considerable retention, liver pathology is fairly certain. This test has several serious defects. In the first place, it is based upon an artificial function. It is not entirely without danger, although the Bromsulphalein is relatively harmless. The test involves at

least three venipunctures, and for this reason is objectionable to the patient.

### JAUNDICE

Jaundice has long been considered the most dependable indication of impaired liver function or disease of the biliary tract. However, it is possible to have jaundice without liver pathology. We now look upon jaundice as being one of three types, namely, obstructive, hemolytic, and toxic or infectious. We recognize jaundice clinically from the deposition of bile pigment in the skin, the sclera, the mucous membranes, and its appearance in the urine. This clinical manifestation is preceded by and accompanied by an excess of bilirubin in the blood. Bilirubin is formed normally by the reticuloendothelial system of the bone marrow, spleen, liver, etc., from the hemoglobin of the broken down red blood cells, and excreted by the polygonal cells of the liver. If there is reabsorption of bilirubin from the biliary passages because of obstruction to the outflow of the bile, or if there is inability of the polygonal cells to excrete the bilirubin, or if there is formed an excess of bilirubin from excessive hemolysis, bilirubinemia results and jaundice is produced. In other words, clinical jaundice is dependent upon bilirubinemia. Not only this, the different types of jaundice seem to be produced by different kinds of bilirubin. The bilirubin which is formed normally in the blood, and from excessive hemolysis differs from that which passes through the polygonal cells and is reabsorbed into the blood because of obstruction. These facts form the basis of what is perhaps the most important liver function test yet devised, namely:

### THE VANDEN BERGH TEST

This test depends upon the oxidation of the bilirubin, using the dizao reagent as the oxidizing agent. The bilirubin which has been altered by passage through the liver cells gives an immediate color reaction when the reagent is added, while the bilirubin formed by excessive hemolysis gives a slow reaction, but when extracted with alcohol, an immediate reaction. The former is called a direct reaction, the latter, an indirect. The former is the typical reaction of obstructive jaundice; the latter of hemolytic jaundice. A third reaction, an immediate color reaction, but with a quick deepening of the color, the so-called biphasic reaction is al-

so described. This reaction seems to be due to the presence in the serum of both kinds of bilirubin, and is the type of reaction usually found in catarrhal jaundice.

#### UROBILOGEN

Normally, the bilirubin is excreted in the bile, and in the large intestine is decomposed to urobilogen. The urobilogen is passed out in the stools, but a portion of it is absorbed into the portal stream and returns to the liver, where it is apparently elaborated again and excreted. The kidney has a low threshold for urobilogen, and there usually appears slight traces of this substance in the urine. If the liver parenchyma is damaged, it is either unable to change the urobilogen into substances that can be excreted, or to excrete it as urobilogen, as the case may be, in which case the blood is over charged with this substance, and the urine shows excess. One of the simplest of all liver function tests has been based on the determination of urobilogen in the urine. The test is as simple as any single routine test on the urine, and consists in adding a small quantity of the aldehyde reagent, (paradimethylamidobenzaldehyde in HC1) to a few cc. of fresh urine. If urobilogen is present in demonstrable amounts, a pink color will develop at once. By a series of dilutions of the urine, the test can be made roughly quantitative, but sufficiently accurate for clinical purposes.

#### DISCUSSION

Most of the tests yet devised give too many fallacies to be of practical value. My experience with the tests for impaired glycogenic function has been disappointing because a positive test is given by many conditions not involving the liver. I have had but little opportunity to use the galactose test, but have my information direct from the originator. I think we must always consider the enthusiasm of the originator and make due allowance.

I believe the Ammonia Coefficient of the urine and the relative amounts of urea nitrogen to the total non-protein nitrogen of the blood to be of significance when positive.

I have had considerable experience with the proteopexique test. I believe this test, when positive, indicates liver pathology, if other pathology can be eliminated. But too much dependence cannot be placed in it.

My experience with the dye excretion tests has been too limited to give an opinion. It is highly recommended by men whom I hold in high esteem professionally. I do know, however, from experience, that the dye is also eliminated by the kidneys, and to my mind this fact renders it of less value as a liver function test.

Jaundice, of course, has a definite meaning, limited to three possibilities. The vanden Bergh test is certainly of assistance in making a differential diagnosis. The immediate direct reaction means obstructive jaundice; the indirect reaction, hemolytic jaundice; and the biphasic probably indicates jaundice of the so-called catarrhal type. Besides this, the vanden Bergh test helps to detect latent jaundice, before the stage of clinical jaundice; by repeating the test at intervals it may help to decide whether the obstruction is becoming more complete, and in this way give some information that may be of value in the diagnosis of malignancy involving the common bile duct; by a decreasing intensity of the reaction, it may point to the liberation of the obstruction before it is noticed clinically; and may indicate progress following operation for obstruction.

The urobilogen test has much to commend it because of its simplicity. It too, helps to differentiate between obstructive and non-obstructive jaundice; urobilogen does not appear in the urine in complete obstructive jaundice; it begins to appear as soon as the obstruction is removed. If a gradually developing jaundice increases in intensity, and at the same time urobilogen which has been present disappears, it is significant of an increasing occlusion, and this frequently means malignancy. In addition to this, the urobilogen test is of value in suspected early cardiac decompensation, because, as soon as there is congestion of the liver urobilogen appears in the urine.

I have not considered the Icteric Index Test because it seems to me to be inferior to the vanden Bergh, because of the effect of hemolysis which may occur even with the best of technic; and a very small amount of free hemoglobin in the serum will vitiate the test.

NOTE—I have not included bibliography; it is very extensive, and I have consulted it freely.

## PHYSIOTHERAPY IN MEDICINE

ELIAS MARGO, M.D.  
OKLAHOMA CITY

It is a sad thought to know physiotherapy in the past has been mainly in the hands of irregulars. Sad as it is, it may be recalled surgery was once practiced by the barber, and sadder it is to know today drugs are administered by the medicine man.

This noble profession is to be commended for its conservatism in accepting new methods of therapy and research. It also should be more prompt in scrutinizing their claims. As a result of such apathy, much that is beneficial falls in the hands of quacks and exploited for evil and our profession made to suffer in mockery as well as sacrifice.

Physiotherapy claims superior therapeutic value as an excitant of corrective physiologic actions. This should have been thoroughly inspected and undergone through rigid scientific tests and clinical trials, and either accepted by our colleagues or condemned officially, as has been done with the electronic reactions of Abrams. As a result of such slow attitude, it has been necessary to rescue it from quackery.

An example of sad neglect of an important physical remedy used by the medical profession for centuries is massage. At the present age, we must look to the two cults which have appropriated and exploited to their heart's desire this remedy. I refer to osteopathy and chiropractic. These cults have advertized, popularized and pushed their false claims to the point where few are those individuals who have not at some time consulted them for many ailments varying from sore feet to leptic insomnia. Massage should have been advanced and held sacred by our profession. Had this been done, these cults would not exist today.

Another ill has been the great idea of our researchers and progressive men to go after big things and overlooking the small, every-day conditions which not only require careful handling, but of which the majority of consultations consist. These are the feeding vitals of the cults and we should admit many get relief and the public is not always deceived. One good turn deserves another one and so they

multiply. A simple example of these may be cited by stiff neck.

In spite of these pitfalls and tribulations, physiotherapy is coming into its own. It has become a well organized department of many good hospitals. Practically every government hospital has it. Some of our large medical schools have established chairs. It is being adopted by clinics and clinical groups. It has a congress founded by real ethical men known internationally. No doubt, the government service put it at a high level and soon all medical schools will have it in their teaching curriculum.

Physiotherapy is the treatment of disease by physical means. It is not a new therapy but perhaps the oldest. Its place is among the specific remedies and has its limited usefulness. When the application is properly and well understood, no therapy is more positive of results. The main pre-requisite in all the modalities of physiotherapy should be a thorough and complete diagnosis. No effort should be made of their use without a known object in results to be obtained. The kind and method of physiologic purpose desired will definitely imply a certain method in course of treatment, for every modality has its limits in reactions relatively to normal or pathologic tissue, thereby, requiring a close observation in physical and chemical equations.

All physical remedies are classified in practice in three kinds; mechanical thermal and chemical. These actions subject to their actual effect upon living tissue by each or by some combination of them. I mention normal living tissue as a unit of application. In dead tissue, we have no such reaction. So in actual use one of these three predominates. With the mechanical, we have massage, vibration, sinusoidal, static electricity and gymnastics. With the thermal, there are three forms of heat. Conductive heat as applied by contact and transmitted by conduction from the heated substance to the desired part to be heated; an example is the hot-water bottle. Convective heat is derived from some such source not in contact with the body but thrown onto the body by radiation, or carried to the body by current of air; an example is radiant light. Convulsive heat is energy converted into heat in the tissues from a high frequency current, that is, diathermy. The generation of heat in diathermy is not greatest at the

surface where the electrodes are applied but somewhere in the tissues between the electrodes, and can be accurately gauged and localized by varying the size and point of application of the electrodes. With hydrotherapy, you may have mechanics or heat or both. This varying with mode and object of therapy. In the chemical effects, we have the ultraviolet or actinic rays, galvanism, X-ray and radium. Your choice should be made in the given pathology only when your diagnosis is made. Mechanics, heat or chemistry, or a combination of these, which is desired and what means should be employed?

Elementary science teaches us that for every action there is a reaction, either physical or chemical. All therapy deals with the reactions of inflammation. These reactions are specific and are always the same. They are nature's effort to repair damage in living tissues, and vary only in intensity. If *sufficient* repair results, if inadequate, the end will be chronic disease, disability or death, either of a part or of the whole. These are the conditions physiotherapy plays such a big role in aiding or supplanting nature in her efforts to rehabilitate destructive processes. This with an agent absolutely at our control to initiate, aid, intensify, retard or balance reactions, thereby controlling effects of inflammation in a way best suited to repair the given pathologic condition.

We have learned the object of physiotherapy is inflammatory reactions and its activities are limited to normal living tissue. With reactions of inflammation not dependable of the cause, the etiology if still active should be removed first. No needed or indicated medication should be omitted. Physiotherapy is an aid or adjuvant and all other known methods should also be employed.

Physiotherapy has its failures, and they may be due to a number of causes. The tissues may not respond, dead tissues do not react. Incorrect diagnosis may be another cause. Hyperactive nerves cannot improve with more stimulation. Slight amount of converse heat aggravates gonococcal infections instead of recovery which only results with intensified diathermy. A large number of failures are due to faulty technic. Proper and correct application is more than ordinary technic read from text books, or completely turning over of patient to technician without proper and unswerving supervision. This

also applies as to relation to environment and meals of patient. You cannot give diathermy or sinusoidal properly on an individual after eating a big meal and expect results. Neither on an overworked and tired person. Fault in technic leads to innumerable conditions, poor results or actual damage.

The mechanical appliances are of special benefit in chronic conditions where not only exercise is needed but the teaching of normal functions as well. They are of value in stiffness of joints or atrophied muscular tissue and where physiologic impairment is present as from lack of use. In intestinal stasis where the abdominal muscles are lax and the normal contour and place of the intestines is altered in position, the sinusoidal is of great benefit. This also is very useful in special muscle training for tonicity. Massage and vibration are too well known to elucidate special therapy uses. But in static electricity, we have one of the most effective mechanical and deep stimulative agents known. This is applicable in some special back conditions, as lumbago, when used with other modalities.

Heat is essential to life, health and function. Nature cures no diseases, repairs no injuries and repulses no invading enemy without an increase in the production of heat, properly known as fever or inflammation. The simplest ways of applying heat are the conductive and convective methods, especially the latter as used in cases of burns, simple aches and to precede some forms of massage. However, the most effective and useful is the converse heat. In diathermy, we have as the name signifies—heat within. This is produced by the passage of a very high frequency current through the tissues. The therapeutic value of heat so produced and localized in pathologic tissue is explained by reactions. It produces an arterial hyperemia, increasing nutrition to the part; dilates capillary, venous, and lymph channels; increasing drainage and favoring osmosis. The high degree of heat inhibits bacterial growth and increases phagocytosis; fibrosed areas are softened, the inflammatory tissue dissolved and the debris eliminated; pain is relieved because pressure is removed. The end result is repair of the diseased tissue treated. This modality is indicated in acute injuries of industrial character, post-fracture treatments, gonococcal infections, hypertension, especially the typical cases of hyper-

piesia in which it is practically specific. Another big field has been opened with this modality, namely: prevention of post-operative shock and elimination of risks common in abdominal operations as outlined by Crile.

The chemical modalities cover a field of such magnitude that only a brief discussion will be given. In galvanism, we have one of the older forms of therapy of which little is generally known, at the same time, is one of the most efficient and satisfactory ways of treating such conditions as leucorrhea, endocervicitis, endometritis and dysmenorrhea. In the latter ailment is, for practical purposes, specific. The same can be said with many neuralgias and some form of neuritis.

We know that sunlight is necessary to animal and plant life and without it we could not exist. In ultraviolet energy, we have the artificial useful chemical sun rays at our command. They are very strongly germicidal in action. They stimulate cellular activity which promotes phagocytosis and the process of metabolism. They produce analgesic effects on nerve endings and makes them useful in neuralgias. They exert an oxidizing action on calcium and phosphorus so that now conditions showing deficiency in these elements can successfully be restored to normal function. An example of this is Rickets in children. The dermatologist cannot afford to be without actinotherapy. It has been demonstrated that disorders of internal secretions do better with the drugs needed plus ultraviolet radiations. Recently, especial emphasis has been made of its use in a large number of cases of abdominal tuberculosis and results obtained are incomparable with any other form of treatment.

In the X-ray, we have a modality which very little need be said as its use has become very general both as an aid to diagnosis and therapy. The same may be said of radium therapy.

Finally let me say what very recently Professor Leduc remarked answering to sarcastic usages by uninformed non-believers in physical therapy: "Some people disbelieve in anything beneficial outside of drug therapy and surgery, but facts cannot be sneeringly disposed of; results are results. Thinkers should never definitely say—"impossible!" Impossible today? Perhaps—but not tomorrow."

## RURAL OBSTETRICS\*

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The term, Rural Obstetrics, as used in this discussion, has reference to that branch of Medicine and Surgery practiced remote from Hospitals, rather than to that practiced in rural districts alone. It may also apply to Obstetrics in the home anywhere. We are for hospitals, first, last, and all the time, both for the safety of the patient, and for the convenience of the obstetrician. But more than ninety-nine per cent of women, with good care before, during, and after, are safe to undergo labor in the home; and in these days of automobiles and good roads, there is not much more than an hour's delay in getting to a hospital if immediate surgery is imperative. Or if necessary, a surgeon and nurse can be summoned in emergency.

This seemed necessary in my practice a few years ago, when a woman six and one-half months pregnant, suddenly developed a severe case of appendicitis, with chills and high temperature, and gave signs of danger. She lived on a lease away from the highway, and the roads were very bad. So a surgeon was hurriedly called. He used the dining table for an operating table, removed the appendix, and the patient made a quick recovery; and in about ten weeks made spontaneous delivery of a strong, healthy child.

Six years ago a case of spina bifida occurred in my work, which looked favorable for operation, but it required early attention if there was any hope at all. We felt there was no chance without the mother's milk, so on the third day, she and the baby were put into the drawing room, and taken by train to the hospital where the child was operated the next day with perfect results. Now after five years she is the most robust of a family of seven, with no untoward results.

Many women prefer to stay at home and take the slight risk, rather than be among strangers for a time. Also the expense is an important item in many homes, both of the hospital and of the home. The majority of cases in the home get along with a practical nurse who looks after the other children too.

\*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Muskogee, May 4, 5, 6, 1927.

The physician who is so situated as to be deprived of hospital facilities, may, by greater exertion on his own part, give his patients most of the advantages received in the best of institutions. He must personally do the routine analyses, both chemical and microscopic; make blood-pressure readings at frequent intervals, watching always for the least rise, and find cause therefor. While eclampsia is not entirely preventable, still by urinary examinations and frequent blood-pressure readings, we can ward off most cases. If the systolic is above 110, and continues to climb, there must be strict regulation of diet, with complete rest in bed, and drastic elimination, if danger is to be averted. Blood pressure readings are far more important than urinalysis in threatening cases, for eclampsia occurs frequently where no albumen shows up in the urine; but so far as I can learn, no cases occur with normal or low blood-pressure.

We saw a patient at six months gestation with a diastolic of 120 and systolic of 170, nervous tension very high, large amount of albuminuria, and very marked edema—all of which had developed within a few days. This woman was put to bed, food limited to milk and water for days. At the end of this time she began labor with a diastolic of 100 and systolic of 140. Under partial anesthesia she delivered a living baby. It, however, showed convulsive symptoms, which disappeared after the use of bromides; and upon a diet of modified milk it became a healthy child. After delivery, the mother's blood-pressure promptly dropped to 85 and 100, and she made an uncomplicated recovery in her own home.

The pelvimeter is an important aid in examination, especially in the primipara. By these measurements we discover it if a Caesarean is indicated; under such a condition, it would be folly to allow the patient to go into labor.

Recently I heard a doctor say he had had three cases in homes that week, and was all tired out; that they were harder on him than three a day were in the hospital. Yes it is hard on the doctor, but he becomes accustomed to it when he has them all in the homes, and likes it. There is no monotony about it.

Unless the community affords a Public Health Nurse, upon the physician falls the responsibility of prenatal instruction, with its influence on the future health of

the nation. Under this comes advice on suitable clothing for the mother and baby, diet, exercise, and elimination. These, insignificant in themselves, mean a great deal in lightening labor.

During the last days of gestation, we advise more liquids and less solids. At first sign of labor, an enema is given, and in case of primipara, one-half glass of castor oil also. The position of the engaging head is then ascertained, if not done previously. Some cases fall to us at the last moment. All examinations are preferably made per rectum; the physician soon learns to be as accurate with this method as per vagina, and the risk of infection is lessened.

Every one has his own notion about relief of pain in labor. Some are still so old-fashioned as to say it is best for Nature to take her course, and the more pain, the more appreciated. But most of us are on the lookout for something to relieve, with no bad effects to the mother or babe. The best thing I have found is Nitrous oxide and oxygen. It gives most relief to the mother, and after using it three years, I can say it is entirely satisfactory. Many have got through naturally where I am sure forceps would have been required without it, and aside from the relief to the mother, it is a great help in reviving asphyxiated babies. By giving the oxygen to the mother after delivery, the child shows immediate results, and becomes pink in a few seconds.

Some object to this anesthetic on the ground that it is too expensive. It does cost more than the drugs used in hypodermic, but in my experience it is safer for the baby. What if we do not make any money on it? If we don't lose, we can afford to use it for the sake of humanity. It is necessary for me to make an extra charge of ten dollars for its use. In some places I understand they charge twenty dollars. But with this charge I have not lost money on it. This amount about evens up, for to some I have to give it only a few minutes, while to others it is for hours.

One particular reason I like to have the patient confined at home is that I can follow the case up better, and see that the baby is properly fed. As soon as convenient, I ask them to send it to my office to be weighed, and to do this every week or two if possible. I try, above all things, to have it fed as Nature is supposed to have

provided, but too often she does not live up to her reputation. For some reason more babies are living out of bottles today, as their parents are living out of tin cans. But if they must have artificial feeding, I urge the use of modified Holstein milk, carefully prepared, and patiently given.

Not long ago a mother complained to me that her baby of two months would not take more than a couple of ounces, and then would cry in an hour or so, and seem hungry, and he was not gaining in weight as he should. I found out she was propping him up on a pillow and expecting him to nurse the bottle alone. She said, "Why, I don't have time to hold it for him; that is when I get my work done." So I say—Always hold the bottle and don't give anything else up to six months except orange or tomato juice and cod liver oil.

Recently a mother brought her six-months-old boy to my office. He was sick; plainly his digestion was upset. I asked what he had been eating, and she said nothing except a whole ice cream cone, but he was used to them, and a coke, but he had drunk them always, and liked them. This shows how much good it does to follow up sometimes.

But with all the safety we feel in these cases at home, we feel a thousand times safer just to know that not many miles away there is a hospital, and a skilled surgeon ready to meet any emergency in his line, and that only a few hours lie between us.

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## ANATOMY AND PATHOLOGY OF THE MAXILLARY SINUS\*

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The adult maxillary sinus has been known to anatomists since the second century but was first described as a pathological possibility in 1651 by Nathaniel Highmore. Since then it has borne the name, Antrum of Highmore.

The primitive sinus maxillaris appears at about the seventieth day of fetal life as merely a shallow pouch—usually single—extending from the ethmoidal infundibulum as a narrow slit in the lateral nasal wall. Through resorption of the cartilaginous capsule and bone, this pouch de-

scends into the body of the maxilla. In the embryo, the sinus necessarily is minute owing to the proximity of the alveolar process to the orbital floor.

At birth as in later life the sinus varies greatly in size and shape. The greatest dimension is anterior-posterior, the next is the vertical and the narrowest is the lateral. To the age of three, the latter is very narrow but, following this time, its increase in growth is proportionately greater than that of the other dimensions.

The general enlargement of the antrum progresses with the growth of the child but, naturally, is less impeded after the first dentition. It reaches the adult stage at about the age of fifteen. In infancy, the middle meatus rather than the inferior is in relation to the sinus and operative procedures should be directed through the former region in order to reach the cavity and to avoid injury to the tooth buds. It must be remembered also in entering the sinus either through the nose or by way of the canine fossa that it is very narrow transversely and that a through-and-through puncture easily is possible.

By the age of fifteen, the sinus has reached almost its full development in size; having expanded gradually in length, height and width from 7x4x3 mm at birth to about 31x18x19. The only further increase in measurements is vertical and diagonal.

The adult maxillary sinus lies in the maxillary bone and has a three-sided pyramidal shape with the apex directed toward the zygomatic process and the base or median wall forming a part of the lateral wall of the nasal cavity. The ventral wall is represented by the facial aspect of the maxilla. It presents the canine fossa which, when prominent, reduces considerably the anterior-posterior dimension. This fossa as well as the canine tooth must not be considered as guides to the penetration into the sinus as was thought at one time. The dorsal wall is very thick and forms the ventral walls of the infratemporal and pterygopalatine fossae.

The base of the pyramid is the median wall which is also the lateral wall of the nose. It shows a large irregular opening, the hiatus maxillaris which is narrowed by the perpendicular plate of the palate, the unciform process of the ethmoid, the maxillary process of the inferior turbinate and a portion of the lachrymal bone. In the recent state, mucous membrane

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\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Muskogee, May 4, 5, 6, 1927.

narrows this opening, forming the communication between the antrum and the infundibulum, and is reflected as the lining of the sinus. Below the attachment of the inferior turbinate, the bone is very thin and is the region of choice for puncture through the nose.

The roof is a thin plate forming the orbital floor. It shows a ridge representing the infraorbital canal which, at times, is not completely enclosed by bone but is bridged in part by the antral mucosa.

The floor is the alveolar process of the maxilla and is the thickest boundary of the sinus. It may show irregular elevations and depressions corresponding to the tooth sockets and their intervening spaces. The relation of the level of the sinus floor to that of the nasal cavity depends largely on the amount of extension of the antrum through absorption of the alveolar process and the degree of the palatal arch but usually it is lower than the nasal floor.

There is no constant relation between the teeth and the antrum owing to wide variations in different skulls and in the halves of individual skulls. The roots of the teeth extend deeply into the floor and may penetrate to the mucosa. While this may occur in young adults, it is more common in the aged. The intimate relationship between the teeth and the sinus are of pathologic importance but it seems that infected antra are as frequent a cause of diseased teeth as is the reversed order.

The canine tooth is only rarely in relation to the antrum, the premolars are more frequently so but the molars are the most constant. Where there is a narrowing between the canine fossa and the lateral nasal wall, it is fairly certain that the canine and premolars are not in direct relation to the antrum and it is unlikely that it can be entered through the sockets or these teeth.

Frequently, the walls of the sinus show irregularities and crescentic ridges which, in rare instances, may become septa, forming two cavities; each with its own opening into the nose. True duplication of the antrum probably is due to an abnormal extension of an ethmoid cell and in these cases, the nasal opening is into the superior meatus.

In the development of the antrum, the primitive maxillary pouch in its extension into the maxilla, leaves a permanent opening the maxillary ostium—which leads into the infundibulum, thence through the hi-

atus semilunaris and into the middle meatus. It should be remembered that the ostium is in the upper part of the nasal aspect of the antrum and that it opens into the ethmoid infundibulum and not into the hiatus semilunaris. There may be more than one ostium due either to duplication of the sinus in its development and having a separate opening into the nose or, if acquired later in life, the result of attenuation of the lateral nasal wall. These accessory ostia occur in from fifteen to twenty per cent of specimens and usually are not found under the age of fifteen.

The antrum is lined with mucous membrane continuous, through the ostium, with that of the nasal cavity. It is columnar, ciliated, very thin and closely applied to the periosteum. It is less vascular than the nasal mucosa and does not contain erectile tissue.

The chief blood supply of the maxillary sinus is the posterior nasal artery which ramifies on the medial wall and anastomoses with delicate collateral branches from the infraorbital and the posterior superior alveolar arteries.

Use of the X-rays gives important information regarding the extent and shape of the antrum and should always be employed before radical operative procedures. The pictures should be taken in the anterior-posterior position and not in profile on account of possible confusion with the opposite cavity. Of somewhat less value in the determination of pathologic conditions is transillumination.

The pathologic conditions of the antrum are acute and chronic catarrhal, acute and chronic suppurative and diphtheritic inflammations of the mucosa.

In acute catharrhal inflammation, the mucous membrane is edematous, hyperemic, loosened and infiltrated with cysts containing yellowish or grayish fluid. In chronic catarrhal states, the edema of the acute form involves the underlying periosteum and the membrane may be swollen to ten or fifteen times its normal thickness. True cysts, hypertrophies and pedunculated polypi may be found.

Acute suppurative inflammation or empyema shows hyperemia and edema with localized hemorrhages into the membrane the surface of which is covered with pus. This condition undergoes resolution or advances to chronic empyema. In the chronic form, there is connective tissue proliferation, pus formation and mucopurulent dis-

charge. Polypoid changes may be present and vary in size from small granulations to large masses. The larger polyps are commonest in the region of the ostium and may protude through this into the nose. The mucosa may be thrown into folds and fibrous changes take place to the extent that the membrane becomes thick connective tissue.

In disease of the accessory sinuses, the pathology usually is limited to the mucosa but inflammations may involve the bone in both a hyperplastic and destructive way. In the latter condition, there may be very serious complications in the orbital and cranial cavities or a general septic state might arise. Extension to neighboring or more distant regions may occur through normal bone by way of the blood streams or through the lymph vessels or their sheaths or by the more direct continuity of thrombosis. Direct extension through bone necrosis due to periostitis or osteomyelitis is not uncommon.

The above-mentioned conditions are considered as being genuine inflammations, having their origin in some acute infection such as influenza or by extension through the ostium from the nose. Transmitted inflammations usually are produced by disease of the alveolar process induced by infected teeth—acute abscess of the root, acute periostitis or circumscribed or diffuse osteitis.

Acute abscess of the root of a tooth usually is secondary to dental caries through trauma, and toxic influences produced by phosphorus, mercury, etc. may produce this condition. At first, this is limited to the dental periosteum and the apex of the tooth becomes exposed. In cases where the overlying layer of bone is thin or missing, empyema of the antrum is especially prone to occur. Necrosis of the alveolus may be aggravated by the trauma caused by extraction of an infected tooth and antrum infection follow this operation.

Empyema of the antrum may be of luetic origin with necrosis of the nasal wall and fistula formation. Tuberculosis of the mucous membrane of the antrum is rare and is secondary to a general involvement or to extension from neighboring structures. Malignancy, usually metastatic, is accompanied by great expansion of the sinus and particularly fetid discharge.

(Acknowledgment of material assistance in the preparation of this paper is made to the writings of Hajek, Hettjer, Hansel, Schaeffer, Phillips and Beck).

## EXPERIENCE IN CATARACT EXTRACTION\*

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Not many years ago there were comparatively few men who operated for cataract. Some of them such as Knapp of New York, and Chisolm of Baltimore, were able to operate on more than 100 cases yearly. Their published statistics have been of great value to ophthalmologists. Today the number of operators is enormously increased so that no one operator is able to report such lists of operations as did these men. Few operators, even in our largest cities, can report individually as many as twenty-five a year.

But as we smaller operators must continue to operate it is just as necessary as ever that we discuss our cases together and compare results in order that we may improve our work. This is the excuse I offer for presenting some of my own experiences based on 200 consecutive operations.

I have operated on all kinds of cases, in all kinds of places, in all kinds of ways, and I may add with all kinds of results. Yet in this series, total failures have been only 9, or less than 5 per cent. In the first 100 cases, which series began thirty-five years ago, before we had the advantage of modern hospital facilities, there were four infections of the wound. In the last 100, but one. Of course it is to be admitted that there ought to be no infections, but they come to every operator some time. Two of mine were in cases operated on in unsanitary homes. One occurred in a man of 75 years who had an uncontrollable convulsive tic, and on whom I operated under protest.

Nowadays, operating in modern hospitals I no longer dread the possibility of suppuration as much as in my earlier years, yet it is a danger ever present. I think, aside from the ordinary aseptic precautions, no one thing is so important in avoiding infection as the use of dry instruments and dry hands. A few drops, or even one drop, of water may wash septic material from the operator's hand or the patient's eyelids or conjunctiva into the wound.

In my first years of operating I employed exclusively, the combined extraction

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

with the classical Graefe linear incision. Then came the simple extraction, which I took up with avidity and pleasure employing it in the great majority of cases, about 40 in all. But soon, with other operators I swung back to the combined extraction, doing the simple only in a selected minority. The visual results in my experience are practically the same in the two methods, but the greater danger of prolapse of the iris is sufficient to condemn the simple operation in most cases. While I had only two cases of prolapse in my simple cases, and while after excision the results were finally good, yet they were exceedingly troublesome.

I have had prolapse of vitreous in only four cases, two of these resulted in detachment of the retina. The others turned out well. I attribute my success in preventing prolapse of vitreous, first, to my habit of putting my patient through a sort of rehearsal before the operation, showing him how simple it is to look up or down and to close the eye quietly, as in going to sleep, and not to squeeze. I tell him not to talk but to listen to me.

Second, on removing the speculum after the section, or later, I make sure to hold, or have my assistant hold, the lower lid away from the eye ball by the finger or thumb placed on the lower rim of the orbit until the upper lid has been fully replaced to its normal position. You all may have noticed that it is the pressure of the lower lid that tends to cause the wound to gap. I have not felt the necessity of injecting the orbicularis with procaine.

I have not done the secondary operation of discission as often as I would if the patients would permit. Being careful to make a large crucial incision of the anterior capsule, the result usually is good or the patient at least satisfied. I seldom use the capsule forceps, always being a little afraid of dislocating the lens. I have done the secondary operation in only twenty cases.

I have irrigated the anterior chamber in a score of cases. In one early case in which I used boracic solution there developed a permanent nebulosity of the cornea, with vision of 20-100, while I obtained in the other eye of the same patient, without irrigation, vision of 20-40. The cataract of the first eye was immature; that of the other operated on a year later was mature. My rule now is, if I

employ irrigation, to use only normal salt solution.

There were thirteen cases of extraction in the capsule, but this was not premeditated in at least three of them. I use Verhoeff's forceps usually in attempting this operation.

Major Smith's operation has not been tried for two reasons: First, the small operator should not try it; second, the majority of those who have observed it are not agreed that it is a good operation for the Caucasian eye. If it has advantages in cases of immature cataracts, that is offset by the fact that in such cases, with irrigation if necessary, we generally get good results anyway. If a small amount of cortex remains, it is not so greatly to be feared after all. It is a matter of frequent observation that cases of extraction, whether of mature or immature cataracts, having vision of, say, 20-100 two weeks after operation, will return in two months with vision of 20-50 or 20-30, or better, after absorption of cortex. For much the same reason I have not essayed the suction operation.

In all I have operated on, twenty-six cases of immature cataract, only one was under sixty years of age. Three were eighty or past, ten had vision of 20-40 to 20-30, fifteen 20-50 to 20-200. The other was one of the unfortunate suppurations previously mentioned.

I have not found age a hindrance to operative success if health is otherwise good. Twelve cases have been over eighty years of age and did well.

It has happened that I have had to operate by the combined method in fifteen cases in which the eye I operated on was the patient's only eye, the other having been enucleated or destroyed by disease. In all of these cases good results were fortunately obtained, although some were complicated by disease existing previously in the eye.

One case was in a man sixty-four years of age. Left eye had been blinded by corneal ulceration three months. Right eye, blind many years, contained a ripe senile cataract, mobile pupil, fair perception and projection. Recovery after combined extraction was uneventful, yet a large central coloboma of the choroid was discovered extending from the papilla nearly to the macula. In spite of this, vision was 15-100. Another was in the case of a man aged forty-eight years,

whose only good eye I enucleated because of a mine accident. The remaining eye had been blind many years. It contained a Morgagnian cataract. The iris was tremulous and the nucleus of the lens could be seen floating about in the milky cortex. Perception and projection, fair. After capsulotomy and the escape of the fluid cortex, the nucleus had to be removed with a scoop. No vitreous was lost. After recovery, which occupied three weeks, the vitreous was seen to be full of fine opacities. Vision, 20-70. The man went back to work in the mines. It is mostly of remark in this case that the worst complication was that the man was a Slav who could not speak a word of English or German.

I have operated with good results on several cases complicated with entropion. I simply pulled all the scratching lashes because the patients would not remain long enough for a lid operation to precede the cataract extraction.

In another category, a very interesting case was that of a woman forty-four years old, blind since childhood. She had hypermature shrunken cataracts which were both completely extracted, capsule and all. The chief interest lay in the fact that as she had never learned the visual form of objects, she had this to learn at a time of life much later than nature designed she should. She learned to see very slowly. At first we feared she could not see at all. Retinal images meant nothing to her. By and by, however, she could count fingers across the room. This was some weeks after operation. Gradually then, she began to distinguish different objects by sight and apply the names she used when formerly she had been obliged to identify them only by the sense of touch. After several months she had learned fully to use her eyes and had vision of 20-40 in either eye. The tardy assumption of the function of vision after operation was not due to any physical defect in the eyes, because in ten days after the operation the media were all clear, fundus normal, and the eyes free from irritation.

I wish here to mention another very unique case. A man seventy-five years old came October 18, 1913, with mature cataract of the left eye and incipient of the right. His left eye was operated on three days later by the combined method. Operation and recovery, smooth. Discharged after twenty-one days. December

9, vision 20-150. The pupil was clear, except for a slight web due to wrinkled capsule. A deep opacity could be made out in the vitreous, but not identified. February 2nd he returned with anterior chamber full of blood. Given atropin and dionin locally, mercury and iodids internally. March 9th, blood absorbed. A yellowish-white globular tumor about three mm. in diameter lay in the lower angle of the anterior chamber. It resembled a cyst, but in another month this had disappeared. Vitreous cloudy, no fundus, V. L. P. After this, eye remained quiet. About the time of the hemorrhage into the anterior chamber, or February 1st, the patient began to develop symptoms of pellagra, and died of this disease in June. His wife had previously died of the same disease.

I do not believe there is another case on record of pellagra complicating cataract after operation.

In one rare case, two years after an operation which had given the patient 20-20 vision, the eye was suddenly blinded by an embolism of the central artery of the retina.

Another rare case was that of a woman seventy-nine years old in which the wound failed to close for two weeks, during which time the anterior chamber remained full of blood, and bloody aqueous continually leaked from the wound staining the dressing red every day. I thought the eye was lost, but the hemorrhage finally ceased on closure of the wound. The blood was slowly absorbed and a dissection of a thin pupillary membrane some months later gave vision of 20-50 and ability to read ordinary print with comfort and ease.

These are some of the interesting and unexpected things that may happen to a cataract operator. They teach us to be ever on our guard, ready for emergencies.

Final results in all cases were:

Vision 20-20	to 20-50	cases	113
Vision 20-50	to 20-100	cases	58
Vision 20-100	to 20-200	cases	20
Vision less than 20-200		cases	9

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Total	200
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Before closing, I wish to add my testimony to the value of the conjunctival flap. In late years I always make use of it as follows, though the method is not original with me: The knife, in making the incis-

ion, is kept exactly in the limbus from puncture and counter-puncture to the summit. As it cuts through the last layers of the cornea the edge is turned backward and carried up under the conjunctiva for one-fourth of an inch or more, making a rather broad conjunctival flap.

I occasionally employ a corneal suture after the method of Kalt or Verhoff.

#### —o— LISTER'S DISTRIBUTORS

In this issue appears a two page colored insert of Lister Bros., Inc., of New York City. For the convenience of readers, a list of their Oklahoma distributors (the field covered by this Journal) is herewith given:

Altus—Altus Drug Store.  
Ardmore—J. E. BeSaw, Grocer.  
Blackwell—City Drug Store.  
Bristow—Palace Drug Co.  
Carmen—Dean & Sterba Drug Co.  
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Mangum—Mangum Drug Co.  
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Sapulpa—City Drug Co.  
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Stillwater—The Diamond Pharmacy.  
Tulsa—Quaker Drug Co.  
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#### —o— ALLERGIC MIGRAINE

Warren T. Vaughan, Richmond, Va. (Journal A. M. A., April 30, 1927), reports ten cases as a further contribution to the study of migraine as an allergic diseases. In this series, treatment by specific avoidance, based on the theory of allergy, has prevented attacks of migraine. In typical cases, renewal of contact with those foods to which the patient has been found sensitive caused return of the attacks. In a total of 33 cases of migraine or chronic periodic headache, the patients have been tested for food sensitization. The ten cases described present definite evidence of relief

from avoidance of allergens, discovered through the skin tests. Two other patients with chronic headaches have been relieved, one for six years by wheat avoidance, the other for the last two years by milk avoidance. Four experienced great relief during the period of observation (from six to thirteen months), but their present state is not known as they did not reply to a follow-up questionnaire. Ten were followed closely for some time and did not derive relief from the treatment. Seven referred patients have not been seen since the tests were made, and did not reply to the follow-up questionnaire. In twelve of the thirty-three cases (36.4 per cent), allergy appears quite definitely to have played a part. In four others, there was at least temporary improvement on avoidance of certain proteins. Ten patients were not benefited. Seven did not reply. These must be recorded as not benefited, although Vaughan's experience with follow-up questionnaires is that the patients with good results are as likely to fail to reply as are those with bad results. Among the ten unsuccessful cases, three patients gave good positive sensitization reactions, but in spite of good cooperation, their condition was not improved. One of these, sensitive among other things to egg, continues with her migraine but reports that eggs always exaggerate her symptoms. Her general physical condition has improved decidedly since she has avoided food containing eggs. There is considerable evidence that in migraine a central nervous system angiospasm exists. Angiospasm is the characteristic vascular phenomenon in anaphylaxis. From a study of his own records, Vaughan believes that the poor results with skin tests reported by other writers may be due in part or entirely to failure to pay sufficient attention to the delayed positive reactions coming on after from six to twenty-four hours.

#### —o— SPONTANEOUS FISTULAS IN LYMPHOGRANULOMATOSIS

In the case reported by Eugene F. Traut, Oak Park, Ill. (Journal A. M. A., April 30, 1927), lymphogranuloma behaved more than usually like tuberculosis of the lymph glands. However, the specific tests excluded tuberculosis. The only factor other than lymphogranuloma tending to produce glandular necrosis and fistulas was prolonged radiation. But fistula formation under roentgen-ray treatment is typical of glanular tuberculosis rather than of lymphogranuloma. Traut says that lymphogranuloma can be clinically indistinguishable from tuberculosis of the lymph glands. It can spontaneously invade the skin and produce fistulas. The caseous material from such processes is grossly identical with the liquefaction necrosis in tuberculosis. Only histologic study and animal inoculation can clearly distinguish lymphogranuloma from tuberculosis of the lymph glands.

#### —o— ACUTE ENCEPHALITIC PARKINSONISM

The case described by Bernard J. Alpers and Clarence A. Patten, Philadelphia (Journal A. M. A., April 30, 1927), is of interest because of the development of a paralysis agitans syndrome almost immediately following an attack of acute epidemic encephalitis. The condition lasted only a short time, and has not recurred in two years.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol. XXI FEBRUARY, 1928 No. 2

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### THANKS FOR COOPERATION

During January more than fifteen hundred and fifty members renewed their membership for the coming year. This is a record not heretofore equalled; we do not believe it is equalled by the membership of any other state association. We wish to extend our thanks and write this as an appreciation of such splendid cooperation. By this promptness the individual took a long step toward aiding his county secretary and the county secretary with equal

cooperativeness of spirit passed the good thing along to our office. This is to advise all concerned that the secretary appreciates the aid and stands ready to reciprocate in any and all matters affecting our members at any time.

#### THE NEXT ANNUAL MEETING

After considerable preliminary work, studying dates and schedules of other organizations planned to meet in Tulsa, May, 1928, the dates of May 17, 18, 19, have been selected as most available, all things affecting the situation considered. These fall on Thursday, Friday and Saturday, and are somewhat an innovation in our history, in that we have always met upon Tuesday heretofore. Investigation disclosed that the week preceeding was taken up by another organization—we think the State Funeral Directors—some other organization has the week following ours and the State Bankers had preempted the dates May 15, 16, so, we had no choice except to select the part of the middle week in May, which seemed most available.

Work upon formation of the various sections is progressing rapidly. They promise to be fuller than ever before. Hotel headquarters will be the Mayo and all meetings, including registration, exhibits and scientific sections will be held in one building, the Shrine Temple. We will have ample room in this building for every activity.

#### SURVEY OF CHIROPRACTIC AND NATUROPATHY

Notwithstanding the appreciable unpleasantness of such work, a representative of the Council on Medical Education and Hospitals, American Medical Association, has succeeded in making a survey of all the schools in the United States maintained by the above named cults. A section of the report deals especially with the situation in Oklahoma. One significant statement, the fact already well known to most physicians, is nevertheless well worth quoting.

"Chiropractic is said to have originated (been discovered) in 1895 with D. D. Palmer, a *magnetic healer*. . . . and to have been "developed" by his son, B. J. It is in reality the older osteopathic concept very slightly modified and renamed. It was the enlarging of the osteopathic field and the lengthening of the osteopathic curricu-

lum that gave chiropractic its opportunity, and the latter's rapid development has been due largely to the fact that it offered a short cut to osteopathy." We believe this to be correct and also to explain the reason, if that is a reason for the osteopath; he is simply seeking a short cut to the practice of medicine by studying osteopathy, rather than medicine, for licensure by osteopathic routes is easier than for the candidate who wishes to sail under the title M. D.

The Chiropractic requirements, the alleged best of such schools claims a four-year high school course as necessary for entrance. It is probable that not one of them are enforcing such requirement. Mature age, business experience, an ability to carry on chiropractic courses, or any convenient achievement is declared to be a satisfactory equivalent. Fifty per cent do not claim to require even a high school education . . . one of the best evaded the requirement by giving night quizzes twice weekly for six months as equivalent, but an extra charge was made for this "preparation." The courses are "poorly chosen," "very poorly outlined" and "poorly arranged." Equipment invariably found consisted of a few adjusting tables, student's chairs and desks. Some have turned to physical therapy or naturopathy and installed a varying amount of electrical apparatus. A few had X-ray machines, used, except in one instance for "spinography." Fifty active schools are listed, a few being mere branches between existing institutions. These fifty constitute less than one-third of those formerly existing. Very few of them have even one adequately trained teacher on the faculty, and there are probably less than five expert all-time teachers in the entire lot of fifty institutions. Not one enforces a matriculation requirement of even five minutes' high school study. Not one gives so much as one worthy laboratory course or has one worthily equipped laboratory. Not one conducts a clinic in which a wide variety of common diseases may be studied, nor are they equipped with scientific apparatus necessary to make a scientific diagnosis of the commoner diseases. Not one maintains a clinic equipped for the treatment of patients suffering from these diseases. None of the schools' faculty or students may enjoy the privilege of practice or even of observation in any worthy hospital. They all proceed on bases of unproved theory, ignoring the lack of endorsement by all worthy educational institutions. They all owe their existence to

the fact that they offer a short cut to the practice of medicine.

The Oklahoma branch was founded by Willard Carver, formerly "attorney" for B. J. Palmer, claims to be two years older than the Palmer school itself, chartered in 1907. Carver is an active man, if his record is correctly stated. He "lectures" at Carver Institute, New York, but that does not prevent him from functioning in like manner in Denver and Oklahoma City. A fourth school, for the south, located at Birmingham, is now reported as inactive. No doubt Dr. Carver could not find time to cover so much territory, hence the demise. Attendance is slowly falling to the vanishing minimum. Very few men can now be found gullible enough to try for such "schoolastic" honors as are offered by this fountain head of wisdom.

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### *Editorial Notes — Personal and General*

DR. C. C. GARDNER, Atoka, has been appointed Captain in the Oklahoma National Guard.

DR. and MRS. J. I. GASTON, for many years located at Madill, have moved to Shawnee.

DR. PAUL MOTE, Sapulpa, who has been suffering from a severe case of influenza, is improving.

DR. D. LONG, Duncan, health officer of Stephens County, has issued warnings as to an impending epidemic of smallpox.

DR. G. S. BARGER, formerly of Wayne, later of Casper, Wyoming, has returned to Oklahoma and located at Purcell.

DR. O. H. COWART, Bristow, who underwent an operation recently, has sufficiently recovered to be removed to his home.

DR. and MRS. A. M. McMAHAN, Duncan, announce the birth of an 8-pound baby girl. Both mother and baby are doing nicely.

DR. W. S. STEVENS, Medical Director of U. S. Indian Service, announces that Indian Hospitals in Oklahoma are treating 225 cases.

PAYNE COUNTY MEDICAL SOCIETY met at Cushing, January 25th. Dr. M. S. Gregory, Oklahoma City, read a paper on "Mental Diseases."

DR. J. A. WALKER, Shawnee, returned the latter part of the past week from a 1,500-mile motor trip in Arkansas, Louisiana and Texas, having been away for about three weeks.

DR. H. C. WEBER was installed as president of the Washington County Medical Society. Other officers installed were: Dr. C. V. Dorsheimer, Dewey, vice-president; Dr. J. V. Athey, secretary; Dr. J. T. Van Sandt, treasurer.

DR. A. J. WEEDN, Duncan, recently visited hospitals in the northwest part of the state as representative of the State Hospital Association.

DR. L. J. MOORMAN, Oklahoma City, recently succeeded in inducing the Oklahoma Land Commission to sell 40 acres of land adjoining his Sanitarium.

DR. G. E. HARRIS, Hugo, is reported slightly improved. Dr. Harris was stricken several days ago with influenza and was taken to the sanitarium at Paris.

DR. R. H. HANNAH, Prague, who has been practicing for 41 years, recently announced that he had delivered 3828 children. The number did not include consultation cases.

COL. WM. H. BAILEY, is the way military letters should now be addressed to Dr. William H. Bailey, Oklahoma City, who was recently promoted from major to lieutenant-colonel.

WOOD COUNTY MEDICAL SOCIETY met at Waynoka. Papers of interest were read and discussed and the program was concluded with a banquet. Drs. Clapper and Hall of Waynoka were hosts.

HUGHES - SEMINOLE COUNTY MEDICAL SOCIETIES met at Holdenville, January 25th. The principal speaker of the evening was Dr. Ray M. Balyeat, Oklahoma City, who spoke on Hay Fever and Asthma.

THE SIXTH ANNUAL KANSAS CITY FALL CLINICAL CONFERENCE will be held in Kansas City, Shrine Temple, October 9-11, 1928, according to the announcement of Dr. James R. McVay, director of clinics.

DR. A. S. RISSER, Blackwell, read a paper on Surgical Diagnosis at the meeting of the Kay County Medical Society at Tonkawa, January 19th. Dr. Risser was guest of honor at a meeting of the Muskogee County Medical Society, January 27th.

OSAGE COUNTY MEDICAL SOCIETY meeting February 6, received the official visit of Dr. C. T. Hendershot, Tulsa, Counselor, who read a paper on Hypertension. Dr. Chas. J. Woods, Tulsa, read a paper on Radium Therapy in Dermatology.

MURRAY COUNTY MEDICAL SOCIETY held their monthly meeting and elected the following officers for 1928: Dr. W. H. Mytinger, president; Dr. O. W. Sprouse, vice-president; Dr. H. C. Bailey, secretary, and Drs. Powell, Glover and Mitchell, censors.

THE ANNUAL STAFF ELECTION at St. Johns Hospital, Tulsa, was held January 17th. Dr. C. D. F. O'Hern being chosen Chief of Staff; Dr. Ross Grosshart, vice-president, and Dr. Claude T. Hendershot, re-elected secretary-treasurer. New members of the Board of Governors will be announced later.

JACKSON COUNTY MEDICAL SOCIETY elected the following officers for 1928: Dr. Joseph B. Hix, president; Dr. W. B. Rudell, vice-president; Dr. Earl W. Mabry, secretary-treasurer, and Drs. John Reid, J. S. McFadin and W. H. Price compose the board of censors.

DR. WILLIS K. WEST, Oklahoma City, was in charge of the Crippled Children Clinic held in Hollis, January 28th. Dr. West held a clinic for crippled children in Mangus, January 12th. These clinics were held under the auspices of the Oklahoma Society for Crippled Children.

LINCOLN COUNTY MEDICAL SOCIETY met January 4, at Chandler. Dr. U. E. Nickell, president, presiding. Meeker was selected for the February meeting place. Dr. W. J. Wallace, Oklahoma City, read a paper on "Pyelitis." Dr. J. W. Rollins, Prague, read a paper on "Hysteris."

POTTAWATOMIE COUNTY MEDICAL SOCIETY met January 12, 1928, beginning with a banquet. During the evening Dr. Lea Kiley, Oklahoma City, made a talk; other talks were made by Dr. J. S. Fulton, president-elect of the association, and Dr. L. S. Willour, McAlester.

TULSA COUNTY SOCIETY held its annual election of officers December 12th. The following were elected: Dr. Claude T. Hendershot, president; Dr. Chas. J. Woods, vice-president, and Dr. Ralph J. McGill, secretary-treasurer. A vacancy on the Board of Censors was filled by the election of Dr. John F. Gorreil.

DRS. E. E. WAGGONER, Tonkawa; R. B. Gibson, C. L. Blanks, and David Cowgill, addressed the Ponca City Lions Club, January 19th. Dr. Cowgill spoke on the "County Health Unit;" Dr. Blanks on "Care of the Eyes," and Dr. Waggoner delivered the principal address upon "The Fallacy of Criminal Insanity."

CREEK County Medical Society elected Dr. G. C. Croston, Sapulpa, President; Dr. O. C. Coppedge, Bristow, Vice-President; Dr. C. L. McCallum, Sapulpa, Secretary-Treasurer. Members of the Society attended a banquet and heard an address on "Medical Jurisprudence" by Grady Lewis, assistant county attorney.

STEPHENS County Medical Society elected the following officers: Dr. A. J. Weedn, President; Dr. L. M. Overton, Vice-President; Dr. J. W. Nieweg, Secretary, "re-elected;" Dr. A. M. McMahan, Censor; J. W. Nieweg and L. M. Overton, delegates; S. H. Williams and B. H. Burnett, alternates; all of Duncan.

MUSKOGEE COUNTY MEDICAL SOCIETY entertained with a dinner at the Town and Country Club January 27th, in honor of Drs. Edward J. Rose, Medical Officer in charge, U. S. Veterans' Hospital, and Calvin E. Clay, Clinical Director, U. S. Veterans' Hospital. Dr. I. B. Oldham acted as toastmaster. Addresses were made by Drs. A. S. Risser, Blackwell; A. W. Pigford, Tulsa, and W. T. Tilley, Muskogee. Dr. Carl F. Jordan, Muskogee, gave an interesting talk on his experiences as a Doctor in China. Lantern slides were shown during his talk. About thirty physicians and their wives were present.

### PHI BETA PI FOUNDERS DAY DINNER DANCE

The Kansas City Alumni Chapter Phi Beta Pi medical fraternity will hold its Founders Day dinner dance at the President Hotel, Kansas City, Missouri, Saturday, March 10th, 7:00 P. M. Dr. Lawson G. Lowery, Supreme Secretary, will be present as well as other prominent representatives of the fraternity. Following the dinner there will be dancing in the Congress room at the hotel from 10:00 P. M. to 1:00 A. M. to music furnished by a ten-piece orchestra. For those who wish to play cards there will be tables in the Assembly room and appropriate prizes will be given to the winners.

The price of the dinner dance will be \$3.00 to members of the alumni, but a special price of \$2.50 is being made to hospital internes and members of the active chapter.

Every member of the Phi Beta Pi fraternity in the State of Oklahoma is cordially invited to be present as between four and five hundred are expected at that time. Remember the time and place—Saturday, March 10th, 7:00 P. M., President Hotel, Kansas City, Missouri.

#### DOCTOR ALBERTO M. SHERBURNE

Dr. A. M. Sherburne, practicing at Cordell for the last 28 years, died October 15, 1927, of cancer of the stomach, after a year's illness. Dr. Sherburne was born at Mateland, New Hampshire, February 23, 1846. His preliminary education was obtained at Syracuse, N. Y., and Northwestern Medical College, of St. Joseph, Mo. He graduated from Northwestern Medical College in 1881. Dr. Sherburne was a member of the Washita County Medical Society and Oklahoma State Medical Association, having been president of the Washita County Medical Society in 1927.

#### DOCTOR GRAHAM STREET

Dr. Graham Street, one of the best known physicians of McAlester, died January 16, after an illness of many months. Funeral services were held under the auspices of the Masonic fraternity. Burial was in Oak Hill Cemetery. Dr. Street is survived by his wife and one sister.

Dr. Street was born in Henderson, Texas, January 15, 1862. He studied medicine and practiced in Austin, Texas, eight years and for four years in Atlanta, Ga. In 1901 he left Atlanta, moving to McAlester where he practiced for 27 years. He specialized in eye, ear, nose and throat work and stood very high in the profession. Dr. Stewart was a prominent Mason, attaining the 32nd degree twenty years ago. He was a member of the old Indian Territory Medical Association until the organization of Pittsburg County Society, of which he was a member.

Dr. Street was of a quiet, unassuming character and made many friends, both personal and professional, during his 27 years in McAlester.

Resolutions, upon the death of Drs. Bland and Anders, Tulsa County Medical Society.

#### DR. J. C. W. BLAND

Dr. James Charles William Bland, age 68, graduate Missouri Medical College, 1884, for 43 years engaged in general practice in Northeastern Oklahoma and Indian Territory, died at the Oklahoma Hospital in Tulsa January 2nd, of carcinoma of the colon, after being confined in the hospital six weeks.

Locating in Red Fork over 40 years ago Dr. Bland was known throughout the Northeastern section of the state for many years—having practiced among the Indians and earlier settlers long before there were any roads or bridges. The hardships endured by this pioneer physician reads like a story from fiction.

It was the writer's privilege to know Dr. Bland intimately for over 20 years, and his kindly counsel and advice was eagerly sought by the younger generation entering practice in the new state in those early days.

Associated with Dr. Fred S. Clinton, long a leading surgeon of Tulsa, Dr. Bland, in 1902, drilled the first oil well in the Indian Territory, at Red Fork. From the impetus of this event followed the oil development that has made Tulsa the oil capital of the world.

Dr. Bland was a member of the old Indian Territory Medical Society, and until a few years ago actively identified with Tulsa County and the State Medical associations.

His funeral was conducted by the Masonic Lodge, of which he had long been a member, at the First Presbyterian Church in Tulsa, Thursday, January 5th, 1928, attended by many of the pioneers of Tulsa and vicinity, as well as friends from his chosen profession.

In the passing of this good man Tulsa County Medical Society loses one whose sympathies were always with its members, and the community a citizen long loved for his adorable character and loving kindness in the hour of distress.

#### DR. WALTER LESESNE ANDERS

Dr. Walter Lesesne Anders, for the past eight years a resident of Tulsa, and a member of the Tulsa County Medical Society passed away December 29th, 1927, at a sanitarium in Guthrie, of paresis.

Dr. Anders was born in Lakewood, Texas, September 26th, 1885, being 42 years old at the time of his death. Graduating from the University of Pennsylvania in 1919, he engaged in general practice in Tulsa, soon after giving special attention to Neurology.

Upon the organization of the Staff of St. Johns Hospital he was assigned this line of service, and in his passing the Staff of St. Johns, and the Tulsa County Medical Society loses a member who will be greatly missed.

Surviving are the widow and four small children. Burial was made in his old home, Palestine, Texas.

#### C. T. HENDERSHOT, M. D.

Chairman of Necrology,  
Tulsa County Medical Society.

**EYE, EAR, NOSE and THROAT**

Edited by Jas. C. Braswell, M. D.  
726 Mayo Bldg., Tulsa

**The Insidious, Symptomless, Destructive Effect of Cholesteatoma.—Lillie, H. I., and Stark, W. B.: Surg. Clin. N. Am., 1926, vi, 1359.**

Two interesting cases illustrating the insidious, symptomless, destructive effect of cholesteatomatous masses in the temporal bone have been observed in the Mayo Clinic.

The first case was that of a woman 26 years of age who complained of severe pain in the left ear, vertigo, and vomiting of three days' duration. Fifteen years previously she had had an attack of acute purulent otitis media on the left side. The tympanic membrane was thickened and bulging. The hearing was diminished, but the responses of the semicircular canals to stimulation were prompt. The roentgenogram showed a sclerotic mastoid.

Incision of the tympanic membrane was followed by immediate and complete relief of the pain and, after the lapse of a few hours, by cessation of the vertigo. There was a foul-smelling discharge. Diffuse labyrinthitis developed, but the acute symptoms subsided in a few days. At operation, it was found that the tympanic membrane and middle ear were filled with a cheesy cholesteatomatous mass. When this was removed, fistulae were discovered leading to the superior and horizontal semicircular canals. Labyrinthectomy was performed. Uneventful recovery resulted.

The interesting features of this case were: the history of an old otitis media, all but forgotten by the patient; the intact tympanic membrane; the foul-smelling discharge following myringotomy; and the labyrinthine symptoms and findings.

The second case was that of a man aged 55 years. The only complaint was itching in the right ear. There was a small crust attached to the postero-inferior wall of the right external auditory canal just external to the isthmus. When this was removed a fistula was found leading into the mastoid. On being questioned, the patient recalled having had in childhood, an acute otitis media on the same side. The tympanic membrane, the hearing, and the responses of the semicircular canals to stimulation were normal. A roentgenogram revealed an extensive destructive lesion of the pars squamosa.

At operation, an unusually destructive process was found. The cholesteatomatous mass involved the squamous portion of the temporal bone to its limits and the petrous portion to the apex. It had dissected the capsule of the labyrinth, distinctly outlining it. The dura near the apex of the petrous portion was very thin, and the removal of the mass injured the dura, allowing the escape of cerebrospinal fluid, which continued to ooze for seventy-two hours. Convalescence was protracted, but no untoward symptoms developed.

These cases show how insidious and extensive may be the effects of cholesteatoma in the temporal bone in the absence of symptoms. In both cases there was a history of disease of the middle ear and the tympanic membrane was intact. It is highly probable that there had been a defect in the tympanic membrane, but that this had healed, leaving in the middle ear a bud of epithelium.

**Cerebrospinal Rhinorrhoea. Johnston, W. H.: Ann. Otol., Rhinol. & Laryngol., 1926, xxxv, 1205.**

The author reviews twenty cases of cerebrospinal rhinorrhoea which have been recorded in the literature and reports one case of his own. In this condition there is a communication between the brain and the nose. The opening may have been produced by an injury such as a fracture through the base of the skull, decay in the sinuses, or pressure necrosis from a tumor, or it may be a small congenital aperture in which a meningocele has developed and ruptured. In some cases the fluid may escape through a patent cranio-pharyngeal canal, through holes in the perforated plate which are deprived of nerve fibers, or along the perineural sheaths.

In most of the cases reviewed the spinal fluid pressure was increased as the result of a reduction of the cranial capacity, an increase in the brain volume, or over-production of fluid. The diagnosis is based on the escape from one nostril, usually the left, of a fluid which, on drying, does not stiffen linen, and which appears and disappears suddenly without any subjective symptoms in the nasal fossa. The fluid reduces copper. When 1 c.cm. of fluorescein is injected into the spinal canal, it is discharged through the nose. The condition must be differentiated from hydrorrhoea and a watery discharge from the antrum.

**An Effective Treatment for Sympathetic Uveitis. Verhoeff, F. H.: Arch. Ophth., 1927, lvi, 28.**

Verhoeff reports his results from a new treatment for sympathetic ophthalmia. The considerations which lead him to employ it were the following:

1. Horses are not subject to sympathetic uveitis; hence their serum might be antagonistic to the disease.
2. The serum of a horse immunized to diphtheria toxin probably contains enhanced non-specific factors of immunity.
3. It is remotely possible that the antitoxin itself might be antagonistic to the disease.
4. The serum might act as an antianaphylactic if the anaphylactic theory of the disease is true.

Before attempting to draw any conclusions as to the value of the treatment it is important to be as sure as possible of the diagnosis in each case. In Verhoeff's cases the exciting eye is removed only if it is so badly injured that there is no reasonable chance for the recovery of useful vision. The patient is tested for hypersensitiveness to antitoxin by the injection of one drop intradermally. If there is no reaction in thirty minutes, the test is negative. If it is negative, 20,000 units of diphtheria antitoxin are heated to body temperature and injected subcutaneously or intramuscularly, preferably in the buttocks. If the test is positive, the patient is desensitized by the injection of the antitoxin at intervals of fifteen minutes in divided doses. In the cases of children the dose is reduced in proportion to the body weight; the same dose is then given daily for one week.

If the case is an early one and the ocular congestion has subsided, the injections are discontinued for one week and then given at weekly intervals for two or three weeks. If the case is an advanced one, the injections are continued until marked improvement has taken place or the patient shows severe symptoms of anaphylaxis, when

they are given at weekly intervals each time in divided doses. In cases with marked congestion, sodium salicylate is given in increasing doses, but not to the limit of toleration. Locally, atropin is employed in the usual way. If the pupil does not dilate fully or there is an increase in tension, daily subconjunctival injections of adrenalin are given. If the tension remains over 28 mm. (Souter), iridectomy is done as soon as the condition of the eye will permit. If there is a pupillary membrane which reduces the vision too greatly and the eye has remained quiet for three months or longer, the lens is removed, the patient being kept under the influence of antitoxin by daily injections before and after the operation.

#### The Treatment of Trachoma by Acetic Acid, Lea, J. A.: *Brit. J. Ophth.*, 1927, xi, 150.

In the treatment of trachoma Lea washes the eye and eyelids with a saturated solution of boracic acid and then drops in a 0.5 per cent solution of cocaine (Darier's solution, which contains adrenalin also). Next he takes an instrument made for him by Weiss (an ordinary tattooing needle will do), dips it into a mixture of equal parts of acetic acid and water, takes care to fill the groove, and, inverting the eyelid, pricks every true granulation and any wavy rolls or fringes of conjunctiva and then washes the eye with a solution of boracic acid again and applies a cold compress to the eyelids for an hour or so.

This is repeated two or three times a week. When the true granulations have disappeared he applies alternatively to the hypertrophied papillae sulphate of copper and a 2 per cent solution of nitrate of silver.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
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#### Myerding, H. W.; Exostosis. *Radiology*, 1927; VIII, 282.

The author emphasizes the value of roentgenograms taken at right angles to determine the exact size, site, and structure of a tumor of bone. Experienced roentgenologists can accurately diagnose an osteochondroma, commonly termed "exostosis." By means of roentgenograms, valuable information as to the relationship of the tumor to surrounding important structures is obtained and the differentiation of local and generalized types of benign and malignant tumors is possible. The amount of bone and cartilage in the tumors varies considerably. Usually there is a cartilaginous cauliflower-like head surrounded by a bursa which, when injected, suddenly enlarges. This enlargement is not infrequently mistaken for rapid growth of the tumor and sometimes for malignancy.

Myerding has rearranged the classification adopted by the Clinical Pathological Association and the Sarcoma Registry so as to lead from the simple inflammatory lesions to the malignant and metastatic groups.

A series of 265 cases of exostosis observed and treated at the Mayo Clinic is reviewed. The diagnoses were verified by pathologists. The average age of the patient was 27 years. One hundred and fifty patients were males. Although heredity is an acknowledged etiological factor in

exostosis, attention is directed to the small percentage of the patients in this group who gave a positive history. Only four of them had noted similar conditions in their families. Twelve gave a history of arthritis. Other incidental diseases were rare. Thirty-nine per cent gave a history of injury in the region of the growth, but in the author's opinion, the injury merely called attention to a pre-existing tumor which had not been noted. Myerding believes that heredity and metabolic disturbances in childhood are the most important factors, and that trauma is of less importance than the histories suggest.

The age incidence of exostosis is similar to that of sarcoma of the long bones, practically 80 per cent of exostoses and 75 per cent of bone sarcoma occurring between the ages of 11 and 40. The distribution is also similar. This similarity is shown in a diagram. The tumors in each group arise most commonly about the knee and shoulder, especially in the lower end of the femur and upper end of the humerus. In cases of exostosis reviewed, sixty-five tumors were found in the femur, thirty-four in the tibia, thirty in the humerus and twenty-six in the foot.

The symptoms were usually a painless swelling and deformity. Stiffness of the joints were rare. Forty-five of the patients complained of dull pain which occasionally became sharp. The Wassermann reaction was positive in only two of 189 cases. Usually slight tenderness was elicited on firm pressure. The skin was freely movable because of the formation of bursae. There was no local heat, and venous congestion was rare. The tumors were usually hard and fixed.

According to the roentgenographic findings of exostosis, the cortical point of origin is in the diaphysis near the epiphyseal line, most commonly in the lower end of the femur and the upper end of the tibia and humerus. The base of the tumor varies from a narrow to broad pedicle, and the tumor mass ranges from a bony projection to a pedunculated mass of varying size. The cortex of the bone and the pedicle of the tumor may appear to be continuous. A cartilaginous cap is common; frequently this has a cauliflower-like appearance. Inflamed bursae may produce distended sacs. The tumors may be local or general. There is penetration rather than invasion of tissue. No absorption of bone occurs unless there is pressure on neighboring structures. The periosteum is expanded over the tumor which usually occurs away from the joints.

The treatment of these tumors is surgical when their presence causes deformity or pain. Cauterization of the base and the use of a rubber tissue drain is advisable. In cases of single tumors, the prognosis is good. Of the patients heard from after being dismissed from observation, 75 per cent reported themselves cured. There was no surgical mortality.

#### Friberg, M. H.: Physical Therapy and its Relation to Orthopedic Surgery. *J. Am. M. Ass.*, 1927, LXXIX, 728.

Friberg calls attention to the present haphazard and inefficient use of physical therapy and suggests how it may be corrected.

The advent of heat baths, electrotherapeutic apparatus, and various forms of light instruments has tended to divert attention from the older forms of physical therapy and, to a more alarming degree, has lessened expertness in the

use of massage, gymnastics, and general physio-logical training.

There is a constant tendency to substitute expertness for a confusion of apparatus. Frieberg insists that physical therapy and apparatus therapy are not synonymous. Most of the apparatus now employed is good and of value under the proper conditions, but it is rare to find that those using them or prescribing their use have more than a superficial knowledge of the relationship of the physical therapeutic agent to be employed and the physiological and pathological changes to be treated.

Some of the most important methods included in the term, "physiotherapy," cannot be supplanted by the use of any of the apparatus now known.

Courses of instruction given in mercantile establishments to increase the sale of certain types of apparatus are not acceptable substitutes for training in medical schools or hospitals, either for the physician who is to direct the treatment or for those who are to act under his direction.

None of the so-called drugless cults is to be regarded as a substitute for it.

It is important that the principles of physical therapy in its modern sense be a part of the education of the student of medicine. The medical student should have at least a minimal amount of training in its application.

A more numerous personnel, thoroughly trained in the practical application of physical therapy in its various branches, should be at the service of the medical profession.

In discussing a personnel to perform the practical part of this work, Frieberg suggests that the nurse is best qualified to select physical therapy as a field for postgraduate specialization.

## TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
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**Bilateral Pneumothorax.** Thomas J. Kinsella and P. M. Mattill. *Amer. Rev. of Tuberculosis*, Dec., 1927.

This is a report of 28 cases with the following results: Seventeen have obtained a more or less satisfactory collapse and have derived some benefit from the treatment. Five received a fair degree of collapse but no benefit, and six, although free space was found, did not obtain collapse of sufficient degree to be of value. Among the 17 who derived some benefit from the treatment, 10 have lost their positive sputum, 3 after the primary and 7 after the secondary collapse, the majority ceasing to expectorate.

Indications: (1) Extension or reactivation of disease in the relatively good contralateral lung. (2) Hemoptysis. (3) Relief of extensive bilateral disease.

Complications: (1) Clear effusions ensued in 17 patients. (2) Tuberculosis empyema occurred in 2 patients. (3) Accidental pneumothorax from puncture of the lung and subsequent leakage of air into the pleural cavity and extensive collapse of the lung occurred in 2 patients. (3) Spontaneous pneumothorax occurred in 2 patients. (4) Mediastinal hernia occurred twice.

The procedure is safe if reasonable care is exercised. It is not attended by discomfort to the

patient. The operator should be experienced in the administration of pneumothorax. Institutional care with strict bed rest and frequent fluoroscopic and roentgenographic control is essential. Frequent refills are necessary to maintain an even compression. Refills should not be done on both sides the same day.

**Purulent Tuberculous Effusions in Artificial Pneumothorax.** John N. Hayes; *American Review of Tuberculosis*, Dec., 1927.

During the period to January 1, 1927, the author has induced some compression in 151 patients with pulmonary tuberculosis, divided into stages as follows: Minimal, moderately advanced, 11 and far advanced, 139. The empyema cases number 32 or 21 per cent of the total. All occurred in the far advanced stages.

Riviere says that empyema is less likely to occur in cases with small pockets which was confirmed in this series. Nineteen cases of empyema developed where there was 76 to 90 per cent compression. Serous effusion bears a grave relation to empyema in artificial pneumothorax. In this series 93 had serous effusion and 32 had empyema.

In treating these cases Hayes advises frequent aspirations of the pus replacing with air during the operation. The pleural cavity is washed with an antiseptic solution. He advises thoracoplasty in every patient with bronchial fistula at its very onset, if the previous general reaction will warrant it.

**The Temperature Pulse Ratio in Chronic Pulmonary Tuberculosis.** C. C. Anderson. *American Review of Tuberculosis*. December, 1927.

In chronic pulmonary tuberculosis the pulse rate is higher in proportion to the temperature than is usual in infectious diseases. The pulse temperature ratio appears to be of value from a diagnostic standpoint and as an index to the clinical conditions of the patient. The pulse rate appears to be a more delicate index of toxemia than the temperature.

**The Leucocytes of the Blood in Tuberculosis: An Interpretation of the Leucocytic Picture Based on the Pathogenesis of the Disease;** E. M. Medlar and G. J. Kastlin. *American Review of Tuberculosis*, December, 1927.

This includes a study of 48 cases with the following conclusions: (No case of incipient or suspected tuberculosis is included)—The mononuclear leucocyte plays the chief role in the formation of the primary mononuclear or epithelioid tubercle. If the infection is at this point counteracted to such a degree that healing occurs with destruction of the tubercle bacilli, there is then a retrogression of the inflammatory exudate. During the healing stage lymphocytes infiltrate the tubercle. Eventually the inflammatory cells disappear and a small scar remains.

If the mononuclear leucocytes are unable to combat the infection successfully they undergo necrosis. At this stage there appears to be produced quite constantly a type of injury which attracts the neutrophils. The accumulation of these cells gives rise to suppuration. If the infection is in such a location that the pus can be discharged to the surface, ulceration or cavity

formation occurs. If enclosed, a "cold abscess" develops.

Following the appearance of caseation the neutrophils are not further attracted to the area. Mononuclear leucocytes and lymphocytes are attracted in large numbers. There is gradual encapsulation of the area and organization as the caseous material is removed. If the caseous material is not removed sufficiently, then calcification may occur. The end stage of such a lesion is an encapsulated fibroid or calcified tubercle with little or no inflammatory exudate present.

Analysis of the 46 cases studied shows the following facts: Every case that died, regardless of the tuberculous lesions found at autopsy, showed a consistent leucocytosis with a high percentage of neutrophils, a low percentage of lymphocytes, a variable percentage of mononuclears with a tendency toward an increase, and often an increase in percentage of eosinophiles and basophiles. The total count varied from 9,000 to 50,750.

An increase of neutrophils and mononuclears is an indication of spread of infection and formation of new tubercles which go to abscess formation. An increase of lymphocytes and mononuclears with little or no increase of neutrophils, indicates good repair with little or no abscess formation, and hence a good prognosis.

If, after a reversal from a septic to a nonseptic picture, the individual develops a trend toward a septic picture on exercise, a clinical break is foreshadowed.

### UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.  
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#### CLIPPINGS FROM UROLOGIC AND CUTANEOUS REVIEW

Keep your intravenous needles sharp by frequent honings on an oil stone.

We all have the common failing that we do not follow up our cases long enough.

A syphilitic roseola can be detected a day or two earlier under quartslight than under daylight.

**Stones in Prostates and Seminal Vesicles**—John L. White, (Texas State Journal of Medicine, 1928,) says that a review of the literature indicates that stone in the seminal vesicles is a very rare condition, a report of only one case having been found. In all obscure cases, and in those resistant to the usual amount of good treatment for seminal vesiculitis and prostatitis, an X-ray examination should be made. A correct diagnosis in these cases will save the patient much suffering and useless treatment. The treatment indicated is usually surgical removal.

**Persistent or Recurrent Pyuria in Infants**—J. M. Venable, (Texas State Medical Journal), emphasizes the point that persistent or recurrent pyuria presents a definite hazard that is twofold, immediate and future, and that our best efforts at diagnosis and treatment are fully warranted. The author believes some stubborn adult cases begin in infancy. Urologists working with

children have found the same disease and anatomical deformities in children as exists in adults, such as hydronephrosis, ureteral strictures and kinks, calculi, and bladder deformities; any one or more of these may be the cause of a persistent or recurrent pyuria. Therefore, before a cure can be effected, it must be known definitely whether the pyuria is vesicle or renal in origin, and to what it is due. Relief of symptoms does not mean a cure; frequent and careful urinalyses are necessary, and more reliance and final judgment should be placed on the examination of catheterized specimens.

**Syphilis of the Upper Respiratory Tract**—M. Hajek in La Medicine Germano-Hispano-Americana, (No. 7, 1927), emphasizes the fact that primary and secondary syphilis of the upper respiratory tract produces no intense lesions in those parts, and that early syphilis of the upper respiratory tract responds to internal treatment without the need for local therapy or surgical intervention. Late syphilis, however, can produce cicatricial stenoses and the destruction of certain organs having a vital relation to respiration. For these late results of syphilis, surgical intervention is often necessary.

**Syphilitic Meningitis**—H. D. Lloyd in the Boston Med. and Surg. Jour., for September 29, 1927, analyzes nine cases of syphilis of the meninges. Headache occurred in eight, vomiting in two, stiff-neck in six and fever in seven. Only two cases showed a Kernig sign. In seven cases the knee-jerk was normal. In seven cases the manifestations occurred in the first year of the disease, in one, not until sixteen years after the infection. One case was congenital in origin. The author believes that lumbar puncture and the administration of the Swift-Ellis serum by the lumbar route, or in severer cases either by cisterna puncture or intraventricular puncture, offers the best prognosis. Only one of the nine patients died.

**"Prostatis Secondary to Furunculosis."**—"Gran-dinearu, (Strasbourg Medical, No. 20 for 1927), gives five practical observations of importance. The disorder may be present during the course of a furunculosis, or may not become manifest until after the furunculosis was cured for some little time. Traumatism by bicycle riding or constant riding in an automobile may operate as predisposing causes. The author considers that the disorder may be set up by hematogenous metastasis, and in some cases by a reno-vesical invasion, or an ascending uretero-caralicular infection. The symptomatology is that of acute prostatitis in general. He divides the cases into two types. In the first group the prostatic localization constitutes a simple episode in the evolution of the staphylococci septicemia; an episode which may be the first chronologically, and upon which may supervene other evidences of staphylococci activity. In the second group the symptoms of septicemia are absent or scarcely detectable, the prostatic localization dominating the picture, though it may nevertheless be the primary seat.

The prognosis is embarrassed by the disease not always being promptly recognized. Whenever there is the least possible indication, one should not fail to employ microscopic examination and culture of the blood and urine.

The treatment is naturally directed to meet

various contingencies. Cold lavages and enemas, sedative suppositories, incision and drainage, and vaccine therapy. The latter may alone prove sufficient. The author considers that it is without doubt, indicated for general septicemia, but that its complex action does not always adapt it for systematic use."

The important thing, it seems, of this article is that the profession in general is beginning to realize that all prostatic infection is not directly due to G. C.

**"Simple Incrusted Ulcer of the Bladder."**—"Dr. Michael Sirovicza in *Zeitschrift für Urologie*, discusses the question of simple incrustated ulcer and its differentiation from other vesical ulcers. He describes four cases cured by operation, this consisting of partial resection combined with curettage. He states that these ulcers are not secondary to an inflammation of the bladder, but that where inflammation is present, it is secondary to the ulceration, and he discusses the possible role of embolism and thrombosis in their etiology. He believes also, that normal urine contains enzymes that are capable of digesting a disease's portion of the mucous membrane, thus bringing ulcer of the bladder into the same class as ulcer of the stomach. He points out that bad teeth, tonsils, and sinuses, may serve as base of operations for infecting micro-organisms and that these should always be investigated. His insistence upon the incrustated ulcer as a distinct pathological entity does not appear to us quite satisfying, as he fails to give us enough diagnostic points differentiating it from ulcer secondary to inflammation, and from the elusive ulcer which has excited so much interest among American Urologists in recent years. Also, his description recalls a rare type of carcinomatous ulcer sometimes seen in the bladder where there is no elevation or depression, but merely an incrust or necrotic surface with a tendency to bleed. Such cancers are rather slow of growth and may show a tendency to improve after operation, but it is not to be hoped that they can be cured by resection or curettage.

The whole question of the classification of bladder ulcers, and their differential diagnosis cystoscopically is difficult and insufficiently discussed everywhere. We should be on our guard against placing a discovered ulcer too quickly, in the category of simple incrustated ulcer. Much work needs still to be done on this subject."

Dr. O. Clark reports six cases in the past three years with diabetes in whom the only causative factor he could determine was syphilis. No venereal history was present but syphilis was satisfactorily demonstrated. This, in a measure, gratifies the writer in that a number of years ago the author reported two cases of the same type, at that time merely suggesting that syphilis might be the cause of the disease. The report was received with a certain degree of amusement but since that time in addition to the above cases reported, I think the Medical Profession have begun to at least think of it as an etiological factor. It might behoove us to keep our minds open on this at least.

**Tissue Regeneration in Bladder.**—DRS. H. L. Kretschmer and Barber report an interesting series of experiments on bladder regeneration following r-section. Most of their work was done on rabbits, a few dogs being used. They go on to show that the bladder very quickly regenerates

and becomes nearly normal in capacity. Their summary is as follows:

1. Extensive resection of the bladder is followed by the formation of a new bladder.
2. The newly formed bladder fulfills completely the function of the old bladder in that it is capable of retaining the urine for many hours and of discharging urine in the normal manner.
3. Incontinence as a permanent complication does not follow even the widest type of resection.
4. From the histologic picture and its close resemblance to the normal bladder, it would appear that the newly formed bladder is the result of regeneration.

#### RESULTS OF OPERATION FOR UNDESCENDED TESTIS

In a series of fifteen cases of undescended testis, reported by J. S. Eisenstaedt, Chicago (*Journal A. M. A.*, April 30, 1927), four of which were bilateral, all testes were satisfactorily brought down into the scrotum. In the ten patients returning for follow-up examinations, all showed a growth of the testis proper for the age of the boy. Hernia was encountered in all cases, in several of which there were rather insignificant sacs. Eisenstaedt says that there are several factors operative in the causation of maldescent of the testis. The most important probably are the many fibrous adhesions to the cord and within the cord which are always present. Proper division and dissection of these strands, and the freeing of the cord within the internal abdominal ring, will permit the testis to be mobilized to a satisfactory level within the scrotum. The total blood supply can and should be conserved. Any severance of the blood vessels to the testis may result in atrophy of greater or lesser degree. Anchoring the testis by any of the several methods is not desirable or necessary. The results in those patients observed from one to ten years after operation were uniformly good.

#### DANGERS ATTENDING INTRASPINAL TREATMENT WITH MERCUROCHROME

Earl B. McKinley and Margaret Holden, New York (*Journal A. M. A.*, April 30, 1927), call attention to the dangers attending the intraspinal administration of mercurochrome-220 soluble. Quite incidental in the course of their study on experimental encephalitis in rabbits, they have found that this chemotherapeutic agent is extremely toxic for the nervous system. According to various reports in the literature, doses as high as 5 mg. of mercurochrome per kilogram of body weight may be used intravenously in rabbits without untoward results. In the authors' experimental work, convulsions and death followed the intraspinal injection of 2.4, 4.8 and 12 mg., respectively, in normal rabbits of 2.5 Kg. within one minute following the injection. The largest of these doses (12 mg.) did not produce any reaction when given intravenously. Five-tenths milligram of mercurochrome injected intraspinally into a normal rabbit produced convulsions and death of the animal within ten minutes, and half of this dose (0.24 mg.) when given intraspinally produced convulsions within a few minutes, and the animal lived for an hour and a half. It appears from these experiments that the introduction of mercurochrome intraspinally is followed by grave consequences, even when doses far less than a therapeutic dose are administered.

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NOTE—Corrections and additions to the above list will be cheerfully accepted.

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# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLA., MARCH, 1928

NUMBER 3

## TREATMENT OF COLITIS\*

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KANSAS CITY

The treatment of colitis is one of the most important subjects with which we have to deal. Colitis in one of its many phases is met with in men and women of all ages and in every station in life. Every conceivable remedy is attempted and we have seen these patients submit to one operation after another in their efforts to obtain relief, in addition to resorting to all sorts of patent and proprietary preparations as well as the most drastic methods of dieting and colonic irrigations. When we stop to consider that such pernicious terms and expressions as "auto-absorption," "auto-intoxication," "internal baths," and "cleansing out the sewer," have crept into our medical literature, it is small wonder that the laity are confused and alarmed as to their condition and allow the health resorts, watering places and manufacturing chemists to reap so rich a reward. In my opinion the large intestine is one of the most grossly mistreated members of the body and it is our duty to explain to our patients the function and care of so important an organ.

For convenience I am dividing the treatment of colitis into two groups, true colitis in which there are actual organic changes in the bowel wall, and so-called colitis, which in reality is a marked irritation of the bowel. True colitis is often met in the acute inflammatory diseases with high temperature, such as pneumonia, typhoid, etc. Here it is merely a part of the generalized infection, clearing up with the causative disease and giving no further concern.

Mucous colitis is sometimes called membranous enteritis, tubular diarrhea, mucous colic, and myxoneurosis intestinalis in which actual mucous casts are

passed from the bowel. Fortunately, it is very rare but many conditions are confused with mucous colitis and these conditions are usually caused by over-stimulation of the mucous-secreting glands with resultant excess of mucus in the stools. This mucus will usually disappear on proper management but casts in true mucous colitis may persist over a period of many years.

Ulcerative colitis is a very severe form of colitis with mucus, pus, and blood appearing in the stools, aside from that produced by the specific ulcers of tuberculosis, syphilis and typhoid. The symptoms are those of diarrhea, temperature in most cases, wasting, debility, and progressive anaemia. The colon can be easily palpated as a round, firm, rope-like mass. It was my fortune to see three such cases during my association with the late Dr. Sippy, all of which had had caecostomies performed. The fecal material being thus side-tracked, was prevented from going over the raw ulcerated area of the colon but even then small passages were continually being made through the normal channel, sometimes as high as 15 to 20 per day. These evacuations consisted almost exclusively of pus, blood, and mucus. One such colon autopsy was similar to a stiff rubber tube through the abdomen; hard, indurated with large areas of pressure necrosis of the mucous membrane. Irrigations are very painful and the medications advised are very unsatisfactory. Results obtained by caecostomy are discouraging but removal of the entire colon is almost out of the question because of the extremely high mortality rate due to shock and the added danger of infection. Surgery in the treatment of any type of colitis is of very little value and such operations as entero-sigmoidostomy which theoretically may be sound, are impracticable. In these operations reverse peristalsis takes the fecal matter backward to the caecum where the water is absorbed and the residual, hard, fecal mass remains indefinitely. I observed one case in which following such opera-

\*Read before the Tulsa County Medical Society, January, 1928.

tion, barium given the patient by mouth remained in the colon for months, when finally the alarming symptoms necessitated a secondary operation in an attempt to restore the mechanism back to normalcy.

Cases of fermentative colitis in which there is actual fermentation of the carbohydrates in the intestinal tract are of greater frequency than generally supposed. These patients are distinctly uncomfortable, bloated, distended, and pass large quantities of gas. The stools are usually mushy to soft-formed, yellow, acid reaction, contain many coarse vegetable fibers, and have a very acid, sour odor. Irrigation of the colon in an attempt to kill and remove the causative bacteria is of little value. These bacteria thrive on the carbohydrates in an acid media. Elimination of the sugar and starches from the diet, together with a mildly alkaline powder frequently administered results in the death of the bacteria which pass out in the stool giving relief of the symptoms. Some of the most pleasing results have been obtained in this type of case. Many points of interest can be demonstrated in the report of a typical case:

Mr. H., age 45, a traveling salesman, entered Research Hospital, September 1, 1926. He complained of loose to watery stools, eight to eleven per day over a period of months, which condition had improved, but at the time he came to me for treatment, he was having four to five stools per day, gruelly to mushy. When not loose to watery, they were usually frothy and would float on the water. Passed large quantities of gas by the bowel and felt bloated and distended. No belching. No vomiting. Had lost 17 pounds in weight. His diet had been limited to leaving off fruits and vegetables, eating milk and cream. Was trying to work. Slept well but of late had been nervous from the bowel condition. No urinary disturbance. No headaches. No cough or night sweats. Diarrhea dated from time he had traveled in Texas. No temperature at any time. No blood or pus noticed in the stools.

His general physical examination was negative. Weight 157. Hemoglobin, 80. Blood pressure, 118-60. Urine analysis was negative. Ewald, free acid 45, total acidity, 66. Stools were yellow, sour, acid,

fermentative, small amount of mucus, no pus, no blood. Fluoroscopic examination of the intestines showed no abnormalities. Proctoscopic, negative. Diagnosis, fermentative colitis.

*Treatment:* Sugars and starches were eliminated and the patient was given chalk and bismuth and after five days had a normal well-formed stool and continued to have one each day thereafter. He made a rapid gain in weight and at the end of five months had regained his old weight and strength.

Another group of cases with which we are all familiar and which is really not a true colitis, is that of the neurotic Stiller type of individual, who is constantly complaining of constipation and all sorts of vague intestinal disturbances. These patients are by nature handicapped; they lack nervous stability and the strength with which to meet the daily demands of life. By taking these patients in hand, stopping the catharsis, securing a gain of fifteen to twenty pounds on a force-feeding diet and requiring adequate rest, we can often bring about a most excellent result.

Before going on with the treatment of the so-called colitis or irritation of the colon, it may be well to review briefly the physiology of the large intestine. It is the function of the large intestine to eliminate the waste material and absorb the water as it is propelled through the colon. This onward propelling of the contents is brought about by the peristaltic movement which consists of wave-like contractions of the intestinal musculature. The production of these intestinal movements is dependent upon a variety of factors as in other portions of the intestinal tract. The nerve supply of the lower bowel is chiefly sympathetic and includes fibers derived from the neurones of the inferior mesenteric and subsidiary ganglia, embracing those of the intramuscular plexus of Auerbach within the intestinal wall. Although it has been shown that the peristaltic movements of the intestines may occur solely as the result of reflexes, the center for which probably lie in the nerve cells of Auerbach's plexus, they may also arise from direct or reflex impulses originating in the central nervous system. Evidence of this is afforded by the marked increase of the colonic movements brought about by taking food into the stomach and by the effects of psychic dis-

turbances upon the motor activity of the intestines.

The most powerful local stimuli to intestinal movements are the chemical and mechanical irritations which arise from undigested remains of food, digestive juice and bacteria. It follows, therefore, that those foods which produce the largest amount of undigested residue and at the same time elaborate certain products of digestion as sugar, organic acids, etc., which act as powerful chemical stimuli, are the most efficient exciters of the colonic musculature.

The material which passes the ileocecal valve is fluid; as it is slowly propelled along the colon, absorption occurs and the contents become progressively less fluid, but remain decidedly soft until retention in the pelvic colon where it acquires the firmer consistency of normal feces.

When a physic is taken the whole normal mechanism is upset by the irritative effect of the foreign substance and nature attempts to get rid of the menace by emptying the colon not only of the normal evacuation but also of the watery contents of the caecum as well. The latter is not supposed to leave the intestinal tract until 24 hours later, so as a result we should not have another bowel movement until 48 hours after the physic; but the average patient is not satisfied with the normal action, becomes panicky, takes another physic before that time, and thus a "vicious cycle" is produced, giving a constant irritation of the bowel.

After this process is followed day after day, never giving the bowel a chance to return to the normal, we have a case of chronic colitis. In reality it is a case of marked irritation of the colon. The symptoms are those of bloating, discomfort over the entire abdomen, rumbling or gurgling, belching, passage of large quantities of gas and general feeling of ill-being. If continued for any great length of time, this often results in a spastic type of colitis, which is very resistant to treatment.

Another source of these chronic cases of colitis is often developed in the pre-operative and post-operative care of a patient. During my surgical internship at Presbyterian Hospital, Chicago, there was indelibly impressed on my mind the battle against post-operative "gas" following laparotomies. These patients were actually uncomfortable and in severe

pain. We gave 1-2-3 enemas, soapsuds enemas, inserted a large colon tube, put heat to the abdomen, washed out the stomach, and made every conceivable effort to get rid of the gas. We wondered why there should be so much gas following an operation. Since then I have had the opportunity of seeing Dr. Howard Hill, of Kansas City, operate and have watched particularly the post-operative period of comparative comfort and freedom from gas in his patients. The plan is simple, in fact, so simple we wonder why it has not been given wider usage. There is no preoperative purging or cleansing of the bowel. At operation all undue handling and trauma of the abdominal viscera is avoided. Following operation, the bowels are left alone even against the opposition of the nurse and patient. The intestinal tract is given time to assume its normal tone and function which may require three to four days. At the end of that time there is usually a spontaneous desire for a bowel movement which may be assisted by a small quantity of water, one-half to one pint. These patients remain free from gas following an abdominal operation. They are comfortable and there is no danger of dating the beginning of a case of irritable bowel from the operation as the result of the vigorous catharsis and bowel flushings so often advised by the surgeon.

Most of the cases of so-called colitis, especially the milder ones where merely stopping the physics will clear up the symptoms are ambulatory in character. They must be required to report to the office daily for many days immediately following the stopping of physics. Here rectal examination will reveal whether or not a bowel movement is necessary or desired and the patient is then instructed to obtain temporary relief or to let the bowels go for one day. Otherwise the patient becomes worried and begins taking physics right away. It is very difficult at best to convince a person who has been relying upon physics for years, that he can get along without them. His daily report to the physician is highly essential. There are times in the beginning of the treatment course when I have let patients go for four or five days without a bowel movement and at the end of that time the patient would have a spontaneous well-formed stool and continue to have one, day after day. Before starting treatment a patient may be very skeptical but will

be convinced of its efficiency as results are obtained.

The more severe cases with marked abdominal distress and large quantities of mucus in the stools require bed rest, preferably in the hospital. The patient is kept in bed for two to four weeks or more depending upon the response to treatment. Heat is applied to the abdomen on alternate hours. Ice cold drinks and foods are avoided. An effort is made to have the patient as free from mental cares and worries as possible, as these influences always have a decided tendency to produce abdominal discomfort when the bowels are sensitive. Medication in the severe cases is limited to a prescription of chalk and bismuth powders—calcium carbonate, calcium phosphate and bismuth subnitrate, a.a. gr. 20, given five times a day; deodorized tincture of opium mm. 8, four times a day and tincture of belladonna mm. 8, four times a day. Tannagin gr. 5, two or three times a day may be required to control a very persistent diarrhea.

The powder is mildly alkaline and is soothing to the irritated nerve endings in the intestinal tract. As bismuth will turn the stool dark this should be explained to the patient. As the stool becomes more constantly firm the medication is gradually reduced, eliminating first the opium and then the belladonna. There is not enough opium in the small dose of tincture for us to worry about the patient acquiring a drug habit even if continued over a long period of time. It becomes necessary at times to stop the belladonna because of the pupillary disturbance but this is necessary only for a short time. The chalk and bismuth powder may be continued indefinitely without any deleterious effects.

The dietary management is very important. The plan that I use was worked out by the late Dr. Bertram W. Sippy of Chicago. I usually outline the diet carefully to the patient and give minute instructions as to handling it.

To start with, when the tendency is to mushy or watery stools the diet should be limited to the following: soft eggs, toast, crackers, well-cooked rice, cream-of-wheat, custards, bread and butter, boiled milk, lean meat if desired. Ordinary soups not containing vegetables may be taken.

If upon the above limited diet the stool

shows a tendency to become hard and dry, add oatmeal, with cream and sugar if desired, then gradually add an increasing quantity of potatoes, then rye and graham bread. As a rule, soon after the stools become formed the bowel will tolerate a small quantity of orange or grapefruit. Lettuce and celery in small quantity is usually not harmful at this stage. If after these additions the stool continues to show a tendency to be hard and dry, gradually add spinach, and then, as the irritability of the bowel decreases, other laxative vegetables such as squash, carrots, peas, string beans, parsnips, sweet potatoes and turnips may be added. If the bowel is unusually irritable, the quantity and variety of the laxative foods should be very cautiously increased. Upon the appearance of loose stools a return should be made to the more restricted diet until the stool becomes more constantly firm.

If upon the addition of two or three of the above vegetables in a fairly liberal quantity the stools continue to show tendency to be hard and dry in consistency, laxative cooked fruits may be cautiously added in about the following order: prunes, peaches, figs, apricots, marmalades of various kinds and apple sauce. Fruits, either raw or cooked, have a more laxative and irritating effect than the vegetables outlined, therefore, they should be added to the diet very cautiously and, if the stools become mushy or bowel distress appears, they should be excluded from the diet until the bowel becomes less irritable.

Should profuse diarrhoea appear, or if the stools continue mushy or watery, the patient should go to bed and apply the heat to the abdomen in the form of a hot-water bag or electric pad about each alternate hour. The diet should then be limited to gruels of farina, rice or barley, made thin with water. Small portions of these gruels may be taken every two to four hours. One or two soft eggs with cracker may be taken during the day if desired. The gruel diet, rest in bed, and hot applications should be continued for two days. You may then substitute boiled milk for half the feedings of gruel. On the fourth day soft egg, toast, and well-cooked rice may be added.

If the bowels have stopped moving on the second day and do not move the third and fourth days, on the night of the fourth day two or three ounces of olive

oil or cotton-seed oil should be injected into the bowel, but never allow cathartics. If on the following morning the bowels have not moved, one-half pint of warm water may be injected. If that is not sufficient use a pint, but do not use a copious flushing. The diet may then be increased to foods described when there is a tendency to mushy or watery stools.

For temporary relief at any time if constipated, the patient may use from one to three ounces of olive oil or cotton-seed oil as an enema to be taken at bedtime and retained over night if possible and without discomfort. If there is no stool in the morning, another injection of one-fourth to one-half pint of water may be used. If no movement then, a pint of water may be used. The smaller the quantity of water used the better. Do not use cathartics or large water enemas.

There are two conditions under which oil may be taken as an enema at bedtime:

1. When there has been no stool during that entire day.
2. When the stool that day has been hard and dry.

If you have neglected to use the oil enema in the evening as advised, and there is no inclination to go to the stool the next morning, a bowel movement should be obtained by using a glycerin suppository or a small soap suppository or an injection of from one-fourth to a half-pint of water. If that is not sufficient, a pint may be used, but do not use a copious flushing.

After the bowel movements have become normal, so that day after day the stool is seldom hard and dry and seldom mushy or watery, an ordinary diet may be resumed, but in general the following foods should form the basis of the diet: cereals, such as well-cooked rice, oatmeal, cream-of-wheat, with cream and sugar as desired; bread and butter; soft eggs; potatoes and other ordinary vegetables in near puree form; meat as desired. Raw and cooked fruits as desired, but in small quantity until it has been determined that they do not cause abdominal distress or mushy and watery stools.

In general, when the tendency is to mushy and watery stools or when abdominal distress due to an irritable bowel is present, avoid ice-cold drinks, buttermilk, lemonade, cider, fruits and fruit juices of various kinds, honey and an excessive quantity of sweets, bran and very

coarse vegetables, cabbage and sauerkraut.

The foods and drinks above mentioned are likely to be particularly irritating in their effect on the intestinal tract, therefore, they should not be used when the stools are mushy or watery or when bowel distress is present. When the stools are formed or show a tendency to become hard and dry, if desired, such food and drinks may be cautiously added, provided they do not give rise to mushy or watery stools, cramps or other abdominal distress.

734 Argyle Building.

## A RATIONAL TREATMENT OF GONORRHEA IN WOMEN

PIERRE N. CHARBONNET, M.D.  
TULSA

This paper is prompted by the apparent neglect of a condition, which from an economic, social and moral aspect, should rank among those things meriting the greatest attention.

The existence of this condition must be frankly recognized, and the large number of cases of sterility, pelvic infections and blindness of the newborn, should command our efforts in attempts to eliminate this deplorable state of affairs.

It is of interest to note in questioning patients, suffering from gonorrhea, that the greatest number presenting themselves, are brought to the office by some incidental latent complication, producing pain, disability, or both; and not because of ignorance of the pre-existing condition which had at one time been treated, but not cured. The treatments are, as a rule, so prolonged, so expensive and so frequently attended with unsatisfactory results that these women become discouraged with a "what's the use," stop before a cure is effected, or worse still, fall into the hands of some unscrupulous "advertising specialist" with disastrous physical and financial results.

Many cases, unaware of the existence of the disease, come in primarily for an acute pelvic condition, or an abscess along the genito-urinary tract, or because of accusation by their husband, or some one with whom they have had relations, to the effect that they had found themselves infected. The slight discharge, the occasional burning or urination, both conditions common

in women had passed by unnoticed. These same symptoms in a man, would have been promptly investigated in the majority of cases.

Of the number of young married women infected by their husbands, usually innocently, a supposedly cured case that had been contracted during bachelorhood, little can be said. The number of "appendectomies" performed during the first few months of married life and the subsequent sterilities, are however, a sad commentary, on the so-called cures.

The blame for this seeming neglect, unfortunately lies on we physicians. We are the ones who only too often discharge as cured, patients without sufficient justification and if they are cured, without the essential warning of the possibility of future infection. Too many surgeons have, in their enthusiasm, removed the diseased tubes, overlooking the infected interstitial portions, the infected urethra, cervix, Skene and Bartholin glands and allowing the patient to continue on her journey, spreading the disease.

State Boards of Health have found means of isolating diphtheria, small pox, etc., but the patient with gonorrhea is allowed to go unrestricted. The United States Public Health Association has done valuable work in the last few years by disseminating information and advice to the people, but that is insufficient. The bulk of the advice and obviously the treatment is still in the hands of the physician.

The first essential in the treatment of any disease is an early and correct diagnosis. Gonorrhea does not differ in this respect from any other. The history is of the greatest assistance, but this even is too often distorted, or essential parts concealed, and when there are reasons for suspecting an infection, even a negative history, must be disregarded and the diagnosis based on the physical findings, supplemented by repeated laboratory examination of secretions.

In acute cases, comparatively rarely seen, the larger percentage of infections, having already reached the chronic stage before the physician is consulted, the diagnosis is comparatively easy in the majority of cases. Large numbers of gonococci are usually present in the secretions. It is the sub-acute and chronic cases, that task our perseverance in searching for the organisms. It is necessary that the urethra be stripped of any present secretion, not

gently, but with considerable pressure. In the same manner the pus must be expressed from Skene's glands. The Bartholin glands must be located and pressure exerted to obtain the secretion. With reference to the latter I believe it not only safe, but advisable to assume that even though the repeated examination of secretion from the latter is found negative, that given the presence of the disease elsewhere in the genito-urinary tract, a palpable gland is always infected. The cervix should be sponged with several changes of sterile water, then massaged with the lips of a bivalve speculum and the secretion examined repeatedly. It is occasionally advisable to touch up the cervix with silver nitrate solution, examining the secretion on the following day.

It must be borne in mind that in the chronic cases, subject to acute exacerbation, the organism may be extremely difficult to find. It is not unusual to get as many as five or six negative smears before a positive one is found.

The treatment I am advocating, having used it in a series of cases with very satisfactory results, is not original with me. It has been used for some time in some of the larger clinics and published by other observers. It may be denounced by some as being too radical in some phases, but it yields results and here we deal with a condition in which failure to obtain results spells disaster.

The early cases unfortunately only too rarely seen, should be handled very carefully. Internal instrumentation must be avoided, or very carefully performed, for fear of spreading infection. Douches should not be used.

Should the case be one of simple urethritis, a condition rarely found, the urethra is treated with strong silver nitrate solution, alternating with mercurochrome, both used on applicators, the urethra having been previously cocaineized. Skene's glands are opened under local anaesthesia, and destroyed with phenol, or the thermo cautery, preferably the latter. The Bartholin glands and cervix are carefully watched and daily smears made, continuing for ten days, after smears from the primary focus have been negative. If clear at the end of that time, the patient is discharged. Rest in bed and hot sitz baths are of great benefit. It is very essential that the patient be advised of the possibility of and means

of prevention of eye infection and of spreading the disease.

When other parts show evidence of infection, the patients should be hospitalized. They are kept at rest and given hot sitz baths and hot douches until the acute symptoms have subsided, after which, under general anaesthesia, the uterus is dilated, is cleansed with applicators and swabbed thoroughly with pure carbolic acid or tincture of iodine. The cervical glands are then destroyed by liberal radial applications of the electric cautery. The Bartholin glands are carefully excised and the ducts destroyed with the cautery. Skene's glands and the urethra are treated as outlined in the preceding paragraph.

Objections to the above outlined treatment could be made on the grounds that the infection would be carried up to the tubes. This objection is overcome when one realizes that in an infection, wide spread as this is, and confirmed by smears, would, if it had not already done so, eventually produce involvement of the tubes, and this would seem our only chance of preventing this.

The swabbing of the uterus in view of the immunity of the endometrium to the gonococcus, would seem unnecessary. When done lightly, however, it is merely a mechanical means of removing any excess secretion that could be the result of the inflammation and combined with the medication would serve to remove any infective materials that could have been carried up in the process of dilatation.

Those cases having had symptoms of tubal involvement, are treated as conservatively as possible. In young women, particularly during the child-bearing period, operation is deferred as long as possible. The treatment outlined above, combined with rest and protein therapy, results in a cure in the large majority. These cases which show symptoms of recurrence of the disease, should be subjected to operation; again being as conservative as possible and yet carefully removing all organs that show any evidence of disease. The operation is of course performed during a quiescent period. In cases presenting some of the other complications, peri-urethral abscess, Bartholin abscess, urethral caruncle, etc., the treatment is that of the complication until cleared, then followed by the radical extirpation of all foci of infection.

Following operation, and for from sev-

eral days to two weeks, there is a more or less profuse discharge, which gradually disappears. The post-operative care, consists of mild antiseptic douches for cleansing purposes and after the reaction to the cautery has subsided, application of 25 per cent mercurochrome to the cervix to obviate secondary infection. This latter is combined with gentle dilatation to prevent stenosis. Smears are made of urethra and cervix at daily intervals, one immediately following menstruation, and if negative after several examinations (ten as a rule) the patient is deemed as cured. Should there again be a positive smear, during the period of observation, a second application of the cautery is indicated and usually clears up the condition entirely.

In my series of cases I have failed to find a single case in which stenosis of the cervix was produced, or which was followed by menstrual disturbance, as a result of the cauterization. Opposition has been offered that the cicatrix, that occasionally remains about the cervix after cauterization, increases the danger of laceration in labor and of malignancy. I have successfully delivered several cases so treated, with no more trouble than ordinarily occur in normal cases. No definite proof has as yet been offered concerning the production of malignancy. It should, however, be borne in mind until definitely excluded.

Here is a note of warning: if these patients are discharged without information as to the danger of re-infection and its prevention, we are going to get recurrences. It is surprising to note the number who believe that once cured of the disease they cannot be again infected. The young married women, particularly those who have been infected by their husbands, must be warned that resumption of relations must be absolutely interdicted, until a definite proof of cure is given them.

This method of treatment, while appearing radical in certain aspects, has yielded, in my hands, most gratifying results. I have been able to feel that I could give patients a fair assurance of cure, when I could not otherwise have done so.

The period of treatment has been shortened and instead of unhappy, disgruntled patients stopping treatment after a few days or weeks, have had them, with few exceptions, so through with it entirely, thereby eliminating another source of infection. It would therefore appear that it should be given consideration and a fair

trial until superceded by some more efficacious method or drug.

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## ESSENTIAL HYPERTENSION IN YOUNG ADULTS

FREDERIC G. DORWART, B.A., M.D.  
MUSKOGEE

I have chosen this subject, not alone for its interest to me, but through its many unknown quantities. Why do young adults have high blood pressure when there are not many years of life behind those persons, on which we can throw the blame for the hypertension! Why is there no demonstrable kidney damage, why very little, if no cardiac changes, when these patients are first seen by the physician?

First, let us consider the circulatory system, the heart, the arteries, the arterioles, the capillaries, the venules and the veins. This is all a closed system and the blood with each systole of the heart is thrown into the arteries raising the pressure there from that which the blood in these arteries is while at rest, or the diastolic pressure, to that pressure or the systolic pressure which the additional column of blood effects. Now, this change in pressure from the diastolic to systolic can be detected as a pulse in the arteries and arterioles only; not in the capillaries, venules and veins, for the capillary bed is eight hundred times that of the aorta, and in this big bed the pulse wave is lost. Of course, the venous pressure is far below that of the arterial, being between eight and twenty as measured in centimeters of water, or eight to fifteen mms. of mercury. These are the organs which receive the highest quantities of blood. The brain 136 cc. per minute for each 100 grams of organ, the kidney 150 cc. and the thyroid glands 560 cc.

Consider next the complexity of the nervous system. The brain, the basal ganglia, the spinal cord with its anterior and posterior nerve roots and with further distribution to every tissue cell in the body. And, upon top of this, note the sympathetic system with its connections which are

known and with its connections which are unknown. The reflexes associated with such systems of nerves are many and how many are unknown and unexplained, have, without doubt, something to do with those symptoms of diseases which we do not understand. I mention this nervous system because it has a good deal to do with blood pressure whether it be high or low or normal, and as an aside here, it may be that essential hypertension is a disease of the autonomic system which our microscopes are unable to demonstrate to us in autopsy material.

The etiology of essential hypertension is unknown and especially in the young adult for he has not had time to lead a life of unusual strain and in as much as there is no known anatomical basis for the malady, no pathology has been brought to light. In those above fifty years of age, who have this high blood pressure, we are frequently able to demonstrate enlargement of the heart, especially of the left ventricle, abnormal electrocardiographic findings, some degree of peripheral arteriosclerosis and kidney damage, but it seems to me that the young adult will not give these signs until his disease has effected a state of extremis or almost so.

The symptoms and signs which hypertension produces are entertaining especially in the young adult. Of course, in the beginning there are no symptoms or signs, but given a sufficient length of time, symptoms and signs will become evident. I believe that of restlessness, and nervousness, a feeling of inner pressure so that one feels himself forced to work on at higher tension, are the beginning symptoms in a goodly number of cases in the young adult. And why? In my opinion because the brain receives a large supply of blood and under this heightened pressure, and because the nervous system has so much to do in the regulation of the beds of the arteries, capillaries, and veins. And, finally, because essential hypertension may, as stated above, be caused by an undemonstrable disease of the nervous system some place, that place perhaps being the sympathetic system. And, all of these systems have to do with stabilizing the human body, so upset by an increased pressure within themselves, they are that much more stimulated and with consequent production of greater and more impulses.

That symptom of headache is explainable easily on the basis of increased pres-

\*Read before Muskogee County Medical Society, December, 1927.

sure within the brain itself. You know this headache when severe can be relieved for a time by draining off the spinal fluid.

The cardiac symptoms are to be explained on the basis of increased work upon the heart. While those related to the kidneys are due pretty much to a like upset. And it is to be remembered that the kidneys receive a good quantity of blood per weight of organ. Cerebral accidents are caused by a blowing out of an artery that is incapable of withstanding the hypertension. Failure of the heart will occur, failure of the kidneys will occur.

But why this hypertension in the young adult? He has not had time to work hard, to lead a life of strain. And why the few signs aside from high blood pressure, and except when the young adult is in extremis.

When we explain fully the multitudinous nerve connections and ramifications, then perhaps will many of our diseases, their symptoms and signs be unfolded.

#### REPORT OF CASE OF GAS GANGRENE TREATED WITH OXYGEN INJECTION AND PEROXIDE.

J. HUTCHINGS WHITE, M.D.  
MUSKOGEE

C. V. Aet, 17 years, was admitted to the Oklahoma Baptist Hospital on the morning of October 25, 1927, with a history as follows: while playing with some comrade seven days previously he was shot, supposedly with blank cartridge shell, in a 12-gauge shot gun producing an irregular wound just below Poupart's ligament on upper inner aspect of the right thigh, a portion of scrotum being shot away at the same time. Following the use of tetanic serum and surgical dressing he progressed favorably until the second day when he began to run high temperature.

At the time of admission, six days after injury, we found a well developed and nourished young man with hot, dry skin, temperature 102 F, pulse 100, respiration 20. Head, nose and throat negative. Lungs clear, sounds broncho-vesicular, no dullness. Heart, no enlargement, no murmurs. Abdomen, no rigidity, no tumors. Oblique scar left lower quadrant, site of old hernia operation, scar firm. There was a large irregular necrotic wound of upper inner aspect of right thigh and a lacerated wound of right scrotum, both

wounds discharging foul pus. The thigh was distended, swollen aedematous two-thirds of way to knee.

The boy was taken to operating room, after due preparation, ethylene gas administered. The scrotal wound was dissected out and edges coapted with silk worm gut. The wound of thigh was enlarged and explored. It was found to be about eight inches deep passing backward into and almost to the skin of the right buttock. Considerable dead and burned tissue was removed, a specimen sent to laboratory. A pair of dressing forceps was then passed to bottom of wound and the patient turned to left side and counter opening made in right buttock. A piece of soft rubber drain with wick of gauze was then grasped with forceps and forceps withdrawn. Wound dressed and patient returned to his bed. Patient had a fair night. Codeine used to give rest—two half-grain doses.

October 26th, patient looks ill, temperature 101.4, pulse 95, free drainage from wound of thigh. Thigh more swollen posteriorly. Laboratory reported bacillus Welchii present in specimen. Moist boracic acid dressings were kept on wounds of thigh.

October 27th, general condition about the same except in increase of pulse to 112. Posterior part of leg showed fluctuation and gas bubbling from wound of thigh. Under ethylene gas a long linear incision was made on posterior surface of thigh down to muscles, evacuating a large quantity of foul pus from between skin and fascia. Muscles on surface were of dull reddish brown color. On incising muscle the fibres just below surface looked normal in appearance. With a six-inch small calibre needle attached by means of rubber tube to an oxygen tank I injected the muscles in all directions allowing a free flow of the gas into all parts of the thigh, irrigated wound with peroxide and applied wet boracic acid dressings and returned patient to his bed.

October 28, patient weaker. Wounds have been cleansed at intervals with peroxide of hydrogen. Another incision, without anaesthetic, six inches long, was made on inner side of thigh. Oxygen injected into muscles and subcutaneous tissue. Temperature 101.6, pulse 112, respiration 22. Codeine for resting.

October 29th, much improved. Highest temperature 99.6 F., pulse 96, respiration

20. Wounds cleansed with peroxide, thigh injected with oxygen. Less oedema and redness, tissues beginning to look healthy, some crepitation above Poupart's ligament but think this is the oxygen gas. Free purulent drainage. Codeine for resting.

October 30th, fair night. No hypos given. Free foul discharge from wounds. Necrotic tissue in posterior wound. A. M. temperature subnormal P. M. temperature 100 F. General condition much improved. No oxygen injected. Peroxide used in wounds.

October 31st, fair night. Wounds clearing up rapidly, crepitation above Poupart's ligament persists. Wound irrigated with peroxide. Wound of scrotum on which a debridement was done, sloughed and opened.

November 1st, incisions on post surface and on inner aspect of thigh improved sufficiently to be drawn together with adhesive strips. Foul odor disappeared. Wounds irrigated with peroxide. P. M. temperature 99 F.

November 2nd and 3rd, wounds irrigated with peroxide. Small amount of bloody discharge. Granulation tissue evident in many spots.

November 4th, moist boracic acid dressings discontinued and physiotherapy, by means of electric light in hood suspended over thigh one hour twice daily. Some discharge from upper angle of posterior thigh wound.

November 5th, 6th and 7th, continues to improve. No temperature. From amount of purulent discharge from upper angle of wound suspected there was a portion of gun wadding lodged in the thigh, but was unable to detect same with instrument.

November 8th to November 30th, condition improved except for free drainage from wound on upper inner aspect of thigh and upper angle of posterior wound, the latter the site of counter drain, and the removal of small piece of cloth on the 11th and 18th instants. Continuation of discharge lead us to believe there remained in the thigh a foreign body. No X-rays were taken of this patient because we accepted the statement of the patient who was informed by the lad who shot him that the shell contained only powder and wadding, no lead. Later developments show that one cannot always rely on patient's statements.

December 1st, under ethylene gas the wound in the buttock, which had been discharging a thin, bloody fluid, was explored. High up in the buttock a large slug of lead was found in a smooth walled cavity. The lead was removed and a soft rubber drain inserted.

December 2nd, temperature 101 F., pulse 120, free drainage from post wound.

December 3rd, temperature 101, pulse 120. Wound flushed with peroxide. Foul odor to discharge. Strychnine gr. 1-30, alternated with digitaline gr. 1-100 every four hours.

December 4th, 5th and 6th, condition remained about the same. Pulse becoming slower. Temperature 101 highest. Appetite improving.

December 7th, temperature subnormal, pulse 98 to 100. Stimulants discontinued. Adhesive strips applied to raw surfaces.

From December 7th to December 10th, continued improvement in general condition. Wounds healing; out of bed and allowed to walk on the 8th. Was discharged to his home in care of his physician on December 10th.

February 7th, wounds have healed except in a small granulating area on post surface of thigh. Patient has been looking after his business for three weeks.

At the present time I am unable to locate the article describing the oxygen-peroxide treatment. Am therefore very sorry I cannot name, but I thank the doctor who suggested this method of treating gas gangrene.

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### GAS GANGRENE; TETANUS— CASE REPORTS

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JOHN F. PARK, M.D.  
TULSA

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#### GAS GANGRENE

*Case 1*—E. R. S., age 24 years, farmer, while riding a horse was struck and injured on the night of October 2, 1927. This man apparently had not bathed for several weeks, and his clothing was filthy with stable and human excreta. Examination on admission at 10:30 P. M. revealed simple transverse fracture of the left clavicle, contusion of the left thorax and renal region, a fourteen inch laceration extending from just below the left anterior su-

perior spine downward and inward across the anterior and internal aspect of thigh, exposing the femoral vessels and undermining the soft tissues; puncture wound above and internal to left patella, puncture wound of the internal aspect of the middle third of left leg, and a seven inch laceration along the left tibia, with exposure of the tibial periosteum throughout its length, respectively. Catheterized specimen of urine was freely mixed with blood; abdomen, heart, and lungs were normal, pulse 120, respiration 24; and there was a moderate degree of shock. For the purpose of this report, all injuries except those of the left leg below the patella may be ignored.

Emergency treatment consisted of reduction of fracture of clavicle, irrigation of the wounds with ether, application of 3 per cent mercurochrome, debridement, drainage at dependent points, loose approximation of tissues, and the administration of 1500 units of antitoxic serum.

On October 3rd urine was free of macroscopic blood, although numerous red blood cells were present microscopically. The wounds were dressed and found satisfactory, but there were hyperpyrexia, extreme acceleration of the pulse and a chilly sensation. Blood examination showed leukocytes averaging 4,800 per cm., and the smear was markedly positive for the malaria parasite.

At 10:00 A. M., October 4th, or about 36 hours after accident, temperature was 101.6, pulse 133, and respiration 32. All wounds were in a satisfactory condition except the one along the tibia, which showed a surrounding zone of a coppery hue with concomitant swelling and increased local temperature. Sutures were removed and continuous hot boracic acid packs ordered. Four hours later it was found that the copper hued zone had spread, the swelling had somewhat increased, a small amount of brick colored exudate was present; and that there was a suggestion of the odor characteristic of gas gangrene. The left foot was irregularly dusky and colder than the right, although the volume and tension of the pulse was apparently the same as on the right. No crepitation of the superficial tissues could be elicited. Since the X-ray very clearly shows the presence of gas in the tissues in gas infection this procedure would have been valuable in confirming our diagnosis, but was not available at the moment.

With a provisional diagnosis of gas in-

fection, based primarily on the odor and character of the exudate and secondarily upon the disproportion between the temperature and pulse, the patient was again anesthetized, a debridement with removal of all dead muscle was done, wounds were thoroughly irrigated with ether followed by Dakin's solution, Carrell-Dakin tubes were placed throughout the leg, but no attempt was made at closure. Post operative treatment consisted of irrigation with Dakin's solution every two hours, day and night; morphine sufficient to control pain, continuous protoclysis of glucose 10 per cent and sodium bicarbonate 5 per cent, and digitalin. An unsuccessful attempt was made to get serum. Although the patient remained delirious for five days, the morning following the operation his temperature was 100.6, pulse 112, and respirations 24. Before operation his temperature had reached 104.8 axillary, pulse was estimated at 170, and respirations were 38.

A section of muscle taken at the time of operation was cultured at the Springer Laboratory by Dr. D. O. Smith, and showed great gas formation, while morphologically the causative micro-organism was found to be the bacillus of malignant edema. Cultures were made at frequent intervals but it was not until November 18th that a negative culture was obtained.

On December 12th the patient was discharged with all wounds healed except an area about 10 cm. x 5 cm., which area was the site of healthy granulations level with the cutaneous border.

#### TETANUS

*Case 2*—E. B. C., age 5 years, November 24, 1927, while playing in the house ran a splinter of wood into the plantar surface of the right foot. In removing the splinter part was broken off and remained in the wound. With the exception of slight soreness and redness there were no untoward symptoms until December 5th or 12 days after accident, at which time he complained of pain in the postcervical region and some trismus. These symptoms increased in severity during the day and that night he had a slight clonic convulsion. By the following morning he had hypertonicity of all skeletal muscles, and all symptoms continued to increase in severity. Three days after attack manifested itself he was seen by a physician who gave 10,000 units of antitetanic serum hypodermically, and recommended his admission to the hospital.

On the fourth day of attack, and 14 days after receipt of his injury, he was admitted to the Oklahoma Hospital with a temperature of 99.2, pulse 110, respirations 22, profuse sweating, cyanosis of face and neck, widely distributed tonic spasms aggravated by superimposed clonic spasms, marked retraction of head with hyperextension of spine so that opisthotonos existed, trismus allowing but about one-fourth inch separation of the jaws, typical risus sardonicus, difficult speech and inability to protrude tongue, a clear mind, peculiar barking noise when mucus collected in his throat, and extension and rigidity of all extremities; the latter symptom being unusual in my experience.

On admission he was given 10,000 units of antitetanic serum intrathecaly, 10,000 units intravenously, and 3,000 units in and about the wound after the original sloughing wound had been excised. Convulsions were controlled with bromide and chloral by rectum, and by small doses of morphine. The following day the temperature was 102, pulse 140 and weak, respirations 40. Cardiac support was ordered and 10,000 units of serum given intravenously. The next day his symptoms were somewhat improved, the clonic spasms being less in number and severity, and the tonic spasms being modified, so that he could now open his mouth about one-half inch. 10,000 units intravenously were given on this date as well as on the day following. On the fifth hospital day he was greatly improved, the rigidity had about disappeared, and no clonic spasms occurred. 10,000 units intravenously were administered. On the sixth day the temperature, pulse and respirations were normal, spasticity had entirely disappeared, and no convulsions had occurred during the previous 48 hours.

On the seventh day patient was discharged after receiving 10,000 units hypodermically. Altogether 83,000 units were given without any evidence of anaphylaxis. No untoward signs or symptoms were noted incident to the administration of the serum except the customary elevation of temperature and acceleration of pulse which usually occur two to three hours after the treatment.

## CLINICAL REPORT OF SYMPATHETIC OPHTHALMIA\*

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TULSA

This is a report of sympathetic ophthalmia seen by me in consultation at my office December 26, 1927. The history of the case was given to me by the attending physician who is an oculist in one of our neighboring towns. The treatment of the case was also carried out by same physician.

The history is as follows: R. D., automobile mechanic, about thirty-five years of age, received an injury to his left eye October 14, 1927. He stated that while hammering on a punch a glancing blow caused the steel punch to strike the eye. Examination revealed a lacerated wound of the eye about five or six mm. in length along the sclero-corneal margin on nasal side. All the coats of the eye were cut, a considerable amount of vitreous was protruding, together with a portion of the iris. The entire cornea was intact. Anterior chamber was full of blood. It was explained at the time that the sight was irretrievably lost and that possibly the eye would have to come out. He implored at the time to save the eye if possible. The protruding vitreous, together with the protruding iris, was clipped off smoothly, eye irrigated, and protective dressing applied. In due course of time the wound healed uneventfully, inflammation subsided, practically all of the congestion disappeared and he was about to be dismissed. The globe was somewhat shrunken. There never was any evidence of infection. X-ray of the globe was negative as to a foreign body being lodged in the eye.

November 1st, two weeks after injury, he complained of his good (right) eye being foggy, which at that time appeared perfectly normal. Two days later he returned again, complaining of the same thing. No pericorneal infection nor evidence of any inflammation was seen. Fundus was clear and no change could be discerned in the nerve head. Three days later he returned again still complaining only of a foggy vision, but still no change could be discerned. Vision then, November 5th, was 20-40 plus. A minus 1 sphere brought the sight up to 20-20. About three days later a slight pericorneal in-

\*Read before Tulsa County Medical Society, January, 1928.

jection was discerned for first time, also a slight blurring of the nerve margin. At this time an enucleation of the injured eye which continued dormant, was recommended. The patient took the advice rather lightly and wanted to watch developments for a few days. Condition of good eye became gradually worse.

December 15th, the patient was taken to Tulsa in consultation with an oculist, largely to impress upon the patient the advisability of having the injured eye enucleated. The exciting injured eye was enucleated on the same day, which procedure did not in the least stay the progress of the inflammation in the good eye. A Wassermann was made which was negative. Rest was enjoined, atropine, and K. I. in ascending doses were prescribed together with heat in the form of compresses every two hours. Still there was no abatement.

On the recommendation of my confrere December 20th, I was called over the phone long distance by attending physician. I recommended diphtheria antitoxin in large doses as a foreign protein, also recommended large doses of sodium salicylate. In twenty-four hours the eye showed considerable improvement. During this time 80 grains of salicylate was given in twenty grain doses. The nausea was so pronounced that the salicylates were cut down. During the twenty-four hours following all the symptoms reappeared in exaggerated form. The patient was brought to my office December 26th.

On examination of eye by me there was marked pericorneal injection, iris was muddy, vitreous hazy, and retina was swollen, and all the vessels were engorged. Vision was very much reduced and prognosis seemed exceedingly grave. The patient seemed in a deplorable condition. I advised sodium salicylate 1 gr. per pound per body weight each twenty-four hours with also an immediate injection of salvarsan intravenously. Sodium salicylate was given, 15 grains every two hours, during the day and every three hours during the night. The patient had considerable nausea and delirium but the eye rapidly improved. At the end of five days the pain and most of the pericorneal injection was gone. The cloudiness of the vitreous and swelling of the retina was improved as was also his vision. At this time the sodium salicylate was reduced to about 120 grains per day, which he is tolerating fair-

ly well. The active inflammation at this time (January 7, 1928) has all subsided although the retina and fundus still shows some disturbance.

The internal use of large doses of salicylate of soda, 120 to 180 grains daily, in divided doses fortified by the simultaneous use of brandy has given good results in the hands of Gifford, who regards it as the most important remedy in sympathetic ophthalmia. It must be continued regardless of tinnitus and nausea. If the stomach rejects salicylate when given in half a glass of water, the medicine may be used in wafers washed down with brandy and water or it can be given by the rectum. Aspirin in 15 grain doses five to ten times a day may be substituted for salicylate of soda. When, as rarely happens, the salicylate of soda causes marked delirium, atophan in similar large doses should be substituted. It does not cause tinnitus or deafness. Since it is insoluble in water or brandy it must be given in wafers, each dose being followed by a glass of warm water. Finally, Gifford advises that the salicylate or atophan treatment should be kept up for at least three days in the week for three months after all kinds of inflammation have disappeared. In rebellious cases 200 to 300 grains of sodium salicylate to a 150-pound individual with the addition of an equal amount of bicarbonate of soda to guard against acidosis.

Salvarsan and like remedies have not given as good results as salicylate of soda, but favorable results have been reported by Morax in the late war. De Schweinitz recommends sodium salicylate in large doses and salvarsan.

The prognosis of sympathetic ophthalmia, while it is essentially grave, is certainly not as unfavorable as in former times. H. Gifford believes that 75 per cent of the cases if seen within the first week retain useful vision if properly treated. My purpose in presenting this case is to emphasize the importance of sodium salicylate in large doses and salvarsan (especially sodium salicylate) in the treatment of sympathetic ophthalmia.

## PHYTOBEZOAR DIOSPYRI VIRGINIANAE—CASE REPORT

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TULSA

The occurrence of masses of undigested foreign matters in the stomach of animals, including man, has been a matter of common knowledge from antiquity. Very often there is found in the stomach of various ruminants a compact mass of hair and food detritus. The "mad-stone" of the laity was such a trichobezoar from the stomach of the deer.

There had been reported in the literature before 1923, five cases in which concretions of vegetable matter had been found in the stomach of man. In that year W. E. Hart of Decatur, Illinois, reported eight such cases in an article which beautifully discussed the subject in detail. Six of the cases were due to the ingestion of persimmons.

Although a number of vegetables such as cocoanut, prunes, potato, salsify and celery may give rise to the formation of these masses, the persimmon, diospyros virginiana, has been the offending agent in the majority of reported cases.

Hart classifies bezoars of the human being into four varieties:

1. The trichobezoar or hair-ball, found in individuals who chew the ends of the hair or swallow the combings after rolling them into compact masses.
2. The phytobezoar or food-ball, composed of seeds, skins and fibers of fruits or vegetables.
3. The trichophytobezoar composed largely of hair, really a trichobezoar.
4. The shellac concretion found in painters, who drink an alcoholic solution of shellac after adding water to it which precipitates the shellac.

The persimmon has 14.1 per cent of gums and pectin which are assumed to aid in the cohesion and formation of a compact mass, when ingested into an empty stomach.

The diagnosis can readily be made from a consideration of the history and X-ray examination.

*Case Report*—O. K. D., male, age 42, occupation, fishing-rod maker. His chief complaint was a feeling of distress in the epigastrium, worse about one hour after eating. He also stated that he felt as

though there was a "lump" in his stomach, and that something seemed to block the passage of food at times. A roentgenological examination of the stomach revealed an area of decreased density, which could be moved freely to any part of the stomach. Following this report, the history was reviewed and the patient stated that he had eaten freely of persimmons while hunting eight months before. Accordingly, a diagnosis of phytobezoar diospyri virginianae was made and operation advised. Gastro-tomy was performed June 17, 1927, and a large cylindrical mass, black in color, was removed. The length of the mass was 9.5 cm., the diameter 4.2 cm. and it weighed 68 grams. The convalescence presented no noteworthy variations from the usual, and in recent conversation with the patient, he reports himself feeling entirely well.

## "DOGS AND DOCTORS"\*

JOHN L. SMILEY, M.D., F.A.C.S.  
SILOAM SPRINGS, ARK.

Some dogs are thoroughbreds. Some doctors are thoroughbreds. All thoroughbred dogs are not champions. All M.D.'s are not doctors. A thorough-bred dog may be a MUTT. An M.D. may be a MUTT. Some dogs are temperamental. Some doctors are temperamental. Every dog has his individuality. Every doctor has his individuality. Most dogs are companionable. Most doctors are companionable. If a dog licks your hand he will not bite you, if a doctor licks your hand and you do not split the fee he will bite you. It has been said that a good way to judge a stranger is to bide your time and see what the children and the dogs think of him. If the children and dogs admire him, he can be trusted.

I once knew a doctor who would not pat a dog on the head unless he was quite sure that the master was observing the kindness. This same doctor's son owned a dog of the mongrel variety, and this doctor was a great stickler for being punctual at his office, and he used to tell this story:

"One day the son's dog, whose name was Ned, came limping to him on the street and held up one of his paws. The doctor looked and saw that there was a thorn in the dog's foot, so he said, 'alright, Ned,

\*Read before Ottawa County Medical Society, December, 1927.

come to the office at two o'clock and I will relieve you.'

"So at two o'clock the dog came and the thorn was removed with little difficulty. A few days later Ned came to the doctor's office at two o'clock, accompanied by a strange cur; an examination showed that he too, had a thorn in his foot. The thorn was removed and the cur went his way and has never been seen since by the doctor."

I have heard the doctor repeat this story several times. Of course I am willing to grant you that this doctor was a liar, and in that sense different from a dog, in that a dog can only tell a silent lie, and I think that they seldom do that. However, I can say without the fear of successful contradiction that the dog is the most appreciative of any of the lower animals, and am sure more so, than some doctors. I am speaking of the doctors who are like dogs.

Dogs have rendered a wonderful service to humanity in both a medical and surgical way, as I believe that the dog has been used for experimental purposes to a greater extent than any other animal. I am sure that you are more or less familiar with Senator Geo. G. Vest's famous tribute to the dog:

"The best friend a man has in the world may turn against him, and become his enemy. His son or his daughter, that he has reared with loving care, may prove ungrateful. Those who are nearest and dearest to us, those whom we trust with our happiness and our good name, may become traitors to the faith. The money a man has he may lose. It flies away from him when he needs it most. A man's reputation may be sacrificed in a moment of ill-considered action. The people who are prone to fall on their knees to do us honor when success is with us may be the first to throw stones of malice when failure settles its cloud upon our heads. The one absolutely unselfish friend that a man can have in this selfish world, the one that never deserts him, the one that never proves ungrateful or treacherous, is his dog.

"A man's dog stands by him in prosperity and in poverty, in health and in sickness. He will sleep on the cold ground where the wintry winds blow and the snow drives fiercely, if only he may be near his master's side. He will kiss the hand that has no food to offer, he will lick the sores

and wounds that come in encounter with the roughness of the world. He guards the sleep of his pauper master as if he were a prince. When all other friends desert, he remains. When riches take wings and reputation falls to pieces he is as constant in his love as the sun in its journey through the heavens.

"If misfortune drives the master forth an outcast in the world, friendless and homeless, the faithful dog asks no higher privilege than that of accompanying him to guard against danger, to fight against his enemies. And, when the last scene of all comes, and death takes the master in its embrace, and his body is laid away in the cold ground, no matter if all other friends pursue their way, there, by the grave side, will the noble dog be found, his head between his paws, his eyes sad, but open to alert watchfulness, faithful and true, even in death."

"The dog is listed with the dumb.

No voice has he to speak his creed,  
His message to humans come  
By faithful conduct and deed;  
He shows, as seldom mortals do,  
A high ideal of being true."

And now for the doctor. My belief is that the medical profession is the most noble calling to which any human can aspire. I, too, believe that as a class, doctors excel all others, from the standpoint of integrity, manliness and unselfishness of purpose. There is scarcely a busy practitioner of medicine who does not do more real charity in one year than the average man will do in a whole lifetime. He does this year in and year out, willingly and uncomplainingly.

I warrant you that there is not a physician present who does not give of his time and money to the education of his clientele, in the matter of health, and as he goes about his daily calls he is continually instructing them concerning personal and general hygiene. Telling them how to avoid being sick. It has been truly said, that the medical profession is the only profession or trade that is continually striving to teach people how to prevent the need of their services.

The clergy, the lawyer, the trader, spends millions of dollars annually in advertising, trying to convince the public that their services are not called for as should be.

Now, for the Ottawa County Medical Society, and the many friends that gather every year at the annual game banquet. I will say that I have never, in all my life, seen such a spirit of brotherhood and fellowship exist among medical men as exists right here, and I will predict that so long as the physicians who now live in and around Ottawa County continue to serve humanity, that the same feeling will continue to exist.

Personally, I consider it a privilege and a pleasure to be invited to these gatherings, and I will say that if you do not want me at these meetings, do not invite me. I certainly feel that it is good to be here.

#### STANDARDIZED METHOD OF TREATING TAPEWORM INFESTATIONS IN MAN TO RECOVER HEAD.

Thomas B. Magath and Philip W. Brown, Rochester, Minn. (Journal A. M. A., May 14, 1927), employ a treatment which, if rigidly adhered to, is said to be successful in practically every instance. The patient should not have luncheon or supper the day preceding treatment; black coffee or tea and water may be taken freely. At 6 p. m., from 15 to 30 gm. of magnesium sulphate is administered, and at 6 a. m. the same dose is again administered. The patient is not given breakfast, and after the bowels have moved, 30 cc. of the following emulsion is administered: oleoresin of aspidium, 6 cc. or 1 Gm.; powdered acacia, 8 Gm.; distilled water sufficient to make 60 cc. One hour later, a second 30 cc. of emulsion of aspidium is administered. Two hours later, 30 Gm. of magnesium sulphate is administered; two hours after this a large soap-suds enema is given. The patient then passes the stool into a container. If the patient has been properly prepared, the stool will consist of practically nothing but water, a few shreds of digested food, and the worm. The top half of the stool, which usually consists of about 2 quarts of water, may be poured off, and the rest of it poured through a sieve with a 20-mesh bottom. Warm tap water is now run through the sieve, and if the procedure is properly carried out, the sieve will contain nothing but the worm. The contents of the sieve are now emptied into a flat enamel pan measuring about 25 by 30 cm., the bottom of which has been painted black with asphalt paint. The sieve is rinsed out into the pail by running water through the bottom. One may then carefully look for the head. If each step has been carefully carried out, the finding of the head will be comparatively simple. The large soap-suds enema given at the end of the treatment is extremely important, for often, when the worm is dislodged, the head breaks off and passes into the colon, where it will remain unless swept out by the large enema. It is also essential to use saline purgative instead of castor oil, as aspidium is highly toxic and soluble in oil.

#### ONE CAUSE OF DISEASE

Now Mary thought if she had health  
'Twere more to be desired than wealth,  
And so that she might live more gaily  
She always did her dozen daily.  
Her calories she'd count with care  
Of proteids she had her share;  
She hooted at the thought of ills,  
She shuddered at the sight of pills.  
She took great pains to fletcherize,  
She'd all her habits standardized.  
It was her most unchanging creed  
To never, never overfeed!  
She took no stock in drug store potions  
Nor wasted substance on their lotions—  
She had no single ache nor pain,  
Quoth she: "The doctors live for gain."

But now, ah now—all this is changed,  
And Mary's habits disarranged.  
Her daily dozen she's foresworn—  
She has all the ills to science known.  
She is a victim of Cachexia,  
Plainly shown by Dysorexia.  
We are sure she has acute Dyscrasia—  
You'd think she'd long for Euthanasia!  
She's all but lost in sad Dementia  
And we fear for her complete Amentia.  
She has an active case of Cardialgia,  
All over her are keen Synalgia.  
She lives in utter Sitomania—  
It's somewhat worse than Metromania!  
She has everything but Odontalgia—  
And she doesn't even want Hypalgia.

Now the reason for this, I opine,  
And the cause of Mary's strange decline,  
Is not that Mary's health is failing  
Or that she's even really ailing,  
But that—the fact is—lately she  
Is enamoured of a young M. D.

—Ina M. Mayfield,  
803 Fon du Lac, Muskogee, Okla.

#### WHOOPIING COUGH IMMUNIZATION

Vaccine for prevention and treatment has at times been condemned and, more frequently, heartily advocated. Vaccination seems to succeed when the conditions are favorable—in other words, when the vaccine is given soon enough and in doses large enough.

Quick action being so important, a new antigen is now offered by Parke, Davis & Co.—an antigen that contains no bacterial bodies, and in the use of which, therefore, there is no waiting time, the antigen being in solution and ready for instant action on the body cells.

This new product is said to be an ectoantigen, since it is obtained by the simple process of washing or rapidly "extracting" the pertussis bacilli with saline solution, and clarifying the "extract." The percentage of protein in this antigen, offered to the profession as Pertussis Immunogen, is very much less than that contained in bacterial vaccines; and the Immunogen is no more toxic, we are told, than the chemical preservative it contains.

Pertussis Immunogen is described and its ranks as a prophylactic and therapeutic agent pointedly discussed in a booklet offered to physicians by Parke, Davis & Co.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under direction of the Council

Vol. XXI

MARCH, 1928

No. 3

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

### EDITORIAL

#### ANNUAL MEETING—COMMITTEES

Tulsa County Medical Society has selected the following committees for service to execute various activities of the meeting:

*General Chairman*, Dr. Ralph V. Smith.

*Exhibits*, Dr. Chas. D. Haralson.

*Finance*, Dr. Roy Dunlap.

*Entertainment*, Fred Y. Cronk.

*Ladies' Auxiliary*, Mesdames H. D. Murdock, Fred Cronk and W. J. Trianor.

*Clinics*, Dr. H. D. Murdock.

*Hotels*, Dr. C. T. Hendershot.

*Medical Reserve Banquet*, Colonels Paul R. Brown, P. P. Nesbit, Ralph V. Smith.  
*Hotel Headquarters*, The Mayo.

Reservations for the meeting may be made by addressing Dr. C. T. Hendershot, Medical Arts Building, Tulsa.

### A PHASE OF SMALLPOX VACCINATION

"The Lesser Things in Medicine" was the title of a few lines written years ago. In this connection the subject of vaccination, or the subject of improper vaccination has often recurred to the writers' mind, as one of the prime causes for a somewhat widespread antipathy in the minds of the people against the simple and effective preventative of smallpox. It is doubtful if there is one procedure in the wide range of medicine executed with so much variance in technique or lack of technique as the simple process of administering smallpox vaccine. It has been done so long that it is no longer considered the function of the physician at all. It is not unfair to state that farmers have been known to go to town and employ a veterinarian to vaccinate the hogs and then undertake without the qualm of uncertainty to vaccinate members of the immediate family. Complimentary to his skill, usually nothing unusual occurs as a result.

There are a few rules or axioms in connection with smallpox vaccination which should never be forgotten by the physician. If kept in mind and passed along to the layman much may be done to lessen the unwarranted prejudice against vaccination.

It should always be borne in mind that vaccination does not "take" except in the person who needs it.

It should not be forgotten that soap, antiseptics of various types used as a preliminary to cleanse the arm, and blood, may render vaccine impotent.

The site selected should be cleansed with any good cleansing agent, then any residue of the agent used should be removed with sterile water, then the vaccine applied through a minute, shallow serum bearing area only. The site should be allowed to dry without the aid of artificialities. Then it should be loosely covered to prevent any small minute infection occurring in a freshly wounded area such as we now have to deal with. Once the characteristics of a successful "take" are apparent, there

is only one proper course to pursue, and, it is believed that neglect to now consider the affair anything except an infection, and one which may become more or less serious, has more to do with the prejudice against vaccination than any other element involved. As a rule the entire arm should be placed in a sling for support, exactly as one would treat an injured arm. The wound should be treated just as one treats other infections. To limit the infection as early as can be, large, compresses of hot boric-alcohol or similar reducers of inflammatory processes should be applied, and over these a moisture retaining material should be placed. With such antiseptics and the injured member placed at rest, the physician may have a clear conscience and rest assured that what may have been an intense reaction, a painful, sickening procedure, should pursue the mildest course relatively and probably result in little or no inconvenience.

Attention to "the lesser things in medicine" in this respect is more than warranted.

#### INCREASED BLINDNESS WAR'S RESULT

The destructiveness of war does not end with armistices by any means. Indirectly, its crippling effects continue to much farther lengths than is at first appreciated. With reference to its effect upon eyesight Dr. Park Lewis, Buffalo, one of the founders, and vice-president of The National Committee for the Prevention of Blindness, in an address on "The Prevention of Blindness A World-Wide Problem," said: "After the Napoleonic wars, when armies were disbanded and soldiers scattered from one end of Europe to the other, many of them carried infectious diseases into places where they were never known before. In that way there was scattered trachoma, one of the most devastating diseases of the eyes. At the close of the recent World War the same thing happened with even more widespread results. The Arab, the Chinese and other orientals had come into France with trachomatous eyes and the soldiers of the Allies had for months been in Syria and Palestine where hygiene had been largely unknown. After the armistice prisoners released from unsanitary surroundings carried infectious diseases into practically every nation of the World." Progress has been made toward localizing the causative element on which trachoma is

dependent, Dr. Lewis said, "Noguchi has succeeded in isolating an organism by which he produces trachoma in the eyes of the monkey. This is of signal importance, although we have far to go before the curative sera are developed."

Dr. Lewis believes that due to the widespread prevalency of trachoma in certain sections of the country and among certain peoples, Congress should take cognizance of the situation in more extended appropriations to the Public Health Service. The infection is certainly one to excite the interest and pity of any observer who is brought into contact with this very chronic and intractable condition.

#### Editorial Notes—Personal and General

FARGO, according to the Fargo Statesman, is in need of a doctor.

DR. G. R. CONNALLY, formerly of Tribbey, has moved to Houston, Texas.

DR. J. H. POWELL, formerly of Kusa, has opened office at 212 Merritt building, Henryetta.

DR. and MRS. C. F. HOUSE, Walters, are on a visit to Cuba, and a tour of the island country.

DR. A. W. PIGFORD, Tulsa, announces the removal of his office to 1001-06 Medical Arts building.

DR. W. T. SALMON, Duncan, underwent an emergency operation recently for severe gastric condition.

DR. F. L. WATSON, McAlester, has moved his office from 21½ E. Grand Ave., to 8 Model building, Choctaw Ave.

DRS. PINNELL, WORMINGTON and DeARMAN, Miami, have become the owners of the Hotel Kenoyer, Miami.

DR. L. A. MITCHELL, Stillwater Agricultural and Mechanical College physician, has been appointed county health officer of Payne County.

DR. A. S. RISSE, Blackwell, addressed the Lincoln County unit of the Parent-Teacher Association on the subject of "Adolescence," February 9th.

DR. and MRS. W. H. LIVERMORE, Chickasha, left February 14th for New Orleans, and will embark there for a cruise of the Caribbean Sea. They expect to be gone about three weeks.

DRS. J. E. and C. C. STANDIFER, Standifer Hospital, Elk City, entertained the Custer County Medical Society early in February. In addition to the members there was a large attendance from out of town. Dr. T. M. Aderhold, El Reno, served as "Chief Carver," the carver being roast pig.

CLAREMORE will benefit by a \$50,000 appropriation of Congress, the money to be used for the Indian Hospital.

DR. DEAN WIDENER, Okmulgee, who has been ill at Okmulgee Hospital for several weeks, has been taken to Johns Hopkins for treatment.

DR. PETER COPE WHITE, Tulsa, was selected Wednesday by the Optimist club as its representative on the citizens committee which will receive and study the report on the child welfare survey which is now in progress in Tulsa.

OKMULGEE - OKFUSKEE COUNTY MEDICAL Societies had a very interesting meeting February 13th, with about thirty members of the two counties being present. Dr. Frank D. Dickson, Kansas City, gave a lecture on "Fractures of the Upper Extremity," with moving picture illustrations.

STEPHENS COUNTY MEDICAL SOCIETY met February 20th, at Duncan. Dr. B. A. Hayes, Oklahoma City, gave a lantern slide demonstration on the disease of the rectum. Drs. Smith, Burnett and Overton were hosts of the meeting and furnished luncheon.

STEPHENS COUNTY MEDICAL SOCIETY had a very interesting meeting February 21st. Dr. B. A. Hayes, Oklahoma City, gave an interesting lantern slide lecture on some of the common diseases of the rectum. Drs. B. H. Burnett, L. L. Smith and L. M. Overton were hosts to the Society at a luncheon at the Baptist Church.

PONTOTOC COUNTY MEDICAL SOCIETY met at Ada, February 28th. Dr. C. P. Bondurant, Oklahoma City, held a skin and cancer clinic in the afternoon which was well attended. After dinner papers were read by Dr. Bondurant on "Some of the Commoner Diseases of the Skin," and Dr. Basil A. Hayes, Oklahoma City, read a paper on "Perineal Prostatectomy."

CARTER COUNTY MEDICAL SOCIETY held the opening meeting for 1928. The following were elected to office for this year: Drs. F. W. Boadway, Ardmore, president; G. E. Johnson, Ardmore, vice-president, and S. DePorte, Ardmore, secretary-treasurer. Delegates to the State Medical meeting: Drs. Walter Hardy and C. J. Gee. Papers were presented by the following members: "Choice of Incisions in Appendectomies," Dr. F. W. Boadway; Paper and Clinics. "Thrombo Angiitis Obliterans," Dr. Walter Hardy, and "Urinary Calculi," Dr. S. DePorte.

CARTER COUNTY MEDICAL SOCIETY held their annual banquet February 14th, at the Hotel Ardmore. The following program was presented:

1. Invocation.....Rev. Joseph Carden, Ardmore
2. Quartet—
  - (a) "Howdy Do Miss Springtime" (Guion)
  - (b) "Appleblossoms" (Daniels)
 Mesdames N. C. Wood, W. G. Grubbs, H. P. McClintock and Tom Frame.
3. Opening Remarks.....Dr. F. W. Boadway  
President Carter County Medical Society.
4. The Medical Profession in Ardmore  
..... J. B. Moore

5. Quartet—  
"Thanks for Men Like You" (Del Riego)  
Mesdames N. C. Wood, W. G. Grubbs,  
H. P. McClintock and Tom Frame.
6. Hay Fever and Asthma, Diagnosis and  
Treatment (Lantern Slide Demonstration)  
.....Dr. Ray M. Balyeat, Oklahoma City
7. Urinary Calculi (Lantern Slide Demonstration)  
.....Dr. J. Z. Mraz, Oklahoma City
8. Toxic Goitre.....Dr. W. W. Rucks, Oklahoma City
9. Closing Remarks.....Dr. J. R. Pollock, Ardmore

THE NEW MORNINGSIDE HOSPITAL, 12th and Utica Streets, Tulsa, was formally opened to the public February 18, 19, 1928. In the afternoon special attention was devoted to the children. From 7:30 to 8:00 a musical concert was rendered after which the following program was given:

- Presiding Officer ..... Hon. Horace Hagan  
Invocation ..... Rev. C. E. Hill  
First Christian Church, Tulsa.  
"The Old and the New Morningside"  
.....Hon. John R. Woodard  
Chr. Board of Directors, Morningside Hospital  
Welcome to Hospital from City of Tulsa  
.....Hon. H. F. Newblock  
Mayor of City of Tulsa  
"Health in the Community".....Hon. P. J. Hurley  
"The Hospital a Community Asset"  
.....Dr. B. A. Wilkes  
Supt. Mo. Baptist Sanitarium, St. Lou's.  
"The Relation of the Public Schools to the  
Hospital".....Dr. P. P. Claxton  
Supt. of City Schools, Tulsa.  
"Oklahoma's Need of Hospitals"  
.....Hon. J. Berry King  
Asst. Attorney-General, State of Oklahoma.  
Violin Solo—"Menuet".....Mr. Theodore Pittenger  
Accompanied by Miss Martha Blunk.  
"The Modern Hospital".....Dr. M. T. MacEachern  
Dir. of Hosp. Activities, Am. Col. of Surg.,  
Chicago.  
"The Economy of Good Hospitalization"  
.....Dr. John D. Finlayson  
Pres., Tulsa University.  
Presentation of the Key to the New  
Morningside Hospital to  
Mr. and Mrs. McNulty—  
Dan Tankersley, Contractor.  
National Anthem.  
Reception and Dance.  
Open House All Day Sunday.  
2:30 P. M., Services.....Dr. W. O. Anderson  
First Baptist Church, Tulsa.

This is believed to be the most complete hospital in many details in Oklahoma. In the first place it has an air of elegance, due to tasteful interior decorative work, usually absent in hospitals. The sterilizing system is the last word in modern sterilization apparatus. The operating rooms are capacious; the lighting system wonderful; the appointments everything the good surgeon desires. The beds are the most modern obtainable, everyone fitted for any unusual case. In ten years the Morningside has grown from a small hospital of thirty beds to the present commanding structure of 225 beds. It is said that the building and the equipment is the most costly ever undertaken in this state.

KIOWA COUNTY MEDICAL SOCIETY met January 11, Hobart, Oklahoma, and elected the following officers for 1928: Drs. J. A. Land, Hobart, president; E. P. Miles, Hobart, vice-president; J. H. Moore, Hobart, secretary-treasurer, and J. D. Ballard, E. P. Miles and J. L. Adams, board of censors.

DR. C. S. BOBO of Norman, the Dean of Oklahoma medicine, celebrated his 18th birthday February 29th. The wheel of fate so placed his birthday that once he went 8 years, from 1896 to 1904, when 1900 was not a leap year, without a birthday. The occasion was fittingly celebrated by a largely attended dinner and the presence of many prominent friends. Dr. Bobo was the recipient of a beautiful chair upon the occasion.

#### DR. JOHN EDGAR BERCAW

John Edgar Bercaw was born in Defiance County, Ohio, June 1, 1880. He died at his home in Okmulgee, Oklahoma, on February 13, 1928, after suffering for more than a year from carcinoma of the thyroid. He is survived by his wife and one son, John Carroll.

He graduated in Pharmacy from Ohio Northern University, and received his M.D. from Starling Medical College in 1902. After two years' practice at Lakeview, Ohio, he came to Okmulgee County and was in active practice here until December 1926, when he retired because of ill health.

Dr. Bercaw was a student, earnest and progressive, interested in the welfare of his brother practitioner, kindly and sympathetic with his patients. He was one of the organizers of the Okmulgee Medical Society, and for several years served as its secretary. He worked for the establishment of the Okmulgee City Hospital and for many years was one of the Board of Directors of the Nurses Training School and a teacher in its classes.

Early becoming interested in X-ray, he became the first to introduce that method of diagnosis in the country. This developed into the main factor of his work. In 1917, in connection with Dr. V. Berry and Dr. W. C. Mitchener, the Okmulgee Clinic was formed. Here his active work was done until the time of his retirement. In 1917-18 he served as chairman of the Medical Advisory Board.

He was a member in good standing of the Okmulgee County and Oklahoma State Medical societies, a Fellow of the American Medical Association and a Fellow of the American Radiological Society.

In the passing of this physician, who so merited the respect and honor of his fellows, the Okmulgee County Medical Society wishes to add their meed of praise to his memory and to extend their sympathy to his loved ones, and it is hereby ordered that this tribute be sent to his family, be spread upon the minutes of the Society and printed in the State Medical Journal.

#### DOCTOR LEVY S. MUNSELL

Dr. L. S. Munsell was born September 21, 1841, at Coldwater, Ohio, and died at his home in Beaver, Oklahoma, February 5, 1928, being 86 years old at the time of his death.

He graduated from Starling Medical College, at Columbus, Ohio, in 1870, and thirty years later took a post graduate course at Kansas City Medical College, Kansas City, Mo. After his graduation from Medical College he practiced medicine in Ohio a number of years, moving to Missouri in 1876 and in 1892 to Indian Territory, locating near where Chickasha now stands. He came to Beaver County in July, 1897, first locating at Old Hardesty, but soon moved to Beaver City where he has since made his home.

Dr. Munsell was a 32nd degree Mason and one of the oldest Masons in the state, having been a member for over sixty years. He was also a member of the Eastern Star, the Odd Fellows and Knights of Pythias.

Funeral services were held Wednesday afternoon at the Christian Church, conducted by Rev. Mr. Gorby, pastor of the Presbyterian Church and burial was at the Beaver cemetery in charge of the local Masonic lodge, the ritualistic ceremony being used.

#### DOCTOR JAMES G. HARRIS

Dr. James G. Harris, Muskogee, died December 31, 1927, after a short illness, the cause of death being uraemia. Born near Muskogee February 18, 1889, he received his literary education in the Cherokee National Male Seminary and the Tahlequah Northwestern State Normal, after which he attended University of Tennessee, Medical Department at Memphis, graduating from the school in June, 1916. After practicing a year in Muskogee he entered the World War, serving in the Medical Corps until 1919, when he was discharged as Captain. He then returned to Muskogee and began his work, specializing in genitourinary diseases. Dr. Harris was a member of the Methodist Church and a Mason, having attained the 32nd degree in the Scottish Rite. Throughout his professional life he was a member of the Muskogee County, Oklahoma, and American Medical Associations. Funeral services were held under auspices of the Masonic order and the Methodist Church at Muskogee, after which interment was made at the family burial ground at Brushy Mountain, the old homestead of the Harris family, near Muskogee. Dr. Harris sprang from a long line of prominent and worthy Cherokee people and throughout his life held to high ideals in his personal and professional life. He leaves a large number of relatives and friends to mourn his passing.

**ORTHOPAEDIC SURGERY**

Edited by Earl D. McBride, M. D.  
717 North Robinson St., Oklahoma City

**Rechtman, A. M.—The Reconstruction Operation on the Hip.**

Rechtman reviews thirty-six operations on the hip performed by Whitman, Kleinberg, and other members of the staff of the Hospital for Ruptured and Crippled, New York.

The operation consisted in general of excision of the head of the femur, deepening of the acetabulum, the replacement in the acetabulum of the modeled femoral neck, and transplantation of the great trochanter with its muscular attachments to a lower level on the shaft.

The operation is advised whenever stabilization of the hip is necessary as in old non-union of fracture of the femoral neck, malum coxae senilis, and pathological dislocations of the head of the femur.

The presence of soft-tissue scarring or destruction does not favor the undertaking. Deformity and failure of hip function are better indications than pain. The results have been very gratifying.

**Meyering, H. W.: Bone Tumors. Minnesota Med. 1925, viii, 628.**

Although most bone tumors are correctly diagnosed by the roentgen ray, a certain few are not recognized until surgical exploration is done. The operability of the tumor depends upon its situation and general character. Early metastasis to the lung may be shown by the roentgenogram.

The nomenclature may be simplified by diverting osseous tumors into the benign and the malignant and a borderline group of inflammatory origin. The term "sarcoma" should be confined to malignant tumors.

The author designates exostoses, chondroma, osteitis fibrosa cystica, and giant-cell tumor as benign tumors, and sarcoma, endothelioma, and multiple myelomata as malignant tumors.

Exostosis arises from a wide or pedunculated base as the result of trauma or inflammation near the ends of the long bones, and occur in youth. Unless function is disturbed, operation may be deferred.

Chondromata are usually composed of hyaline cartilage supported on a fine framework of connective tissue. They are avascular, and may be simple or multiple. In the later stages they may degenerate. There is no venous engorgement, and the growth of the tumors is slow.

Osteitis fibrosa cystical usually occur in youth. The cysts grow slowly and cause enlargement and softening of bone in the femur, humerus, tibia, and proximal ends of the diaphysis. Roentgenograms are usually diagnostic.

Giant-cell tumors grow slowly. Exploration is usually necessary for a certain diagnosis. The prognosis is good as regards life. Amputation may be necessary when the tumor has invaded the large joints. The growth should be called a benign foreign body giant-cell tumor.

In cases of osteogenic sarcoma, amputation may remove the local condition, but metastasis must be prevented if a cure is to be expected. The most

common sites of osteogenic sarcoma are the lower end of the femur, the upper end of the tibia, and the upper end of the humerus. Trauma is an important factor in the etiology.

Endotheliomata appear to be osteoclastic. They spread over the shaft of the long bones, producing bulging striations. They may be single or multiple. They tend to metastasize and are usually fatal.

Multiple myelomata are mutiple tumors of the bone marrow. They are more common in males than in females, and occur between the ages of 40 and 60 years. Roentgenograms may show one or more rarefied circular or ovoid osteoclastic areas in the soft bone. Later, the periosteal structures are affected. Albuminuria may be suggestive of the condition. Remission of symptoms may occur. The prognosis is poor, the patient surviving only for a period ranging from a few months to five years.

**Sneed, W. L., and Patterson, R. H.—Report of Two Hip Operations. South. M. J., 1925, xviii, 803.**

The first case reported by the authors was a case of united fracture of the neck of the femur of fourteen months duration in a man 55 years of age. At operation, the hip was exposed through a curved incision, the attachment of the vastus lateralis was separated, and the muscular attachments of the lesser trochanter were chiseled away except at the lower border. The femur was then rotated outward to expose the head and the acetabulum. The head was reamed out until only the acetabulum remained, and the denuded trochanter was fitted into the head. The detached trochanter was then displaced downward and sutured to the shaft, and a long plaster-of-Paris spica was applied with the limb abducted to about 20 degrees. Active and passive motion were begun after six weeks.

The result was very satisfactory. The shortening has been reduced from 2½ to 1½ inches. In the discussion of this report, Campbell, Dickson, and others stated that the procedure described is a modification of the Brackett and Whitman method.

The second case was that of a man 28 years old who had tuberculosis of the right hip with suppuration when he was 4 years old. There was complete displacement of the trochanter, resulting in shortening of 5½ inches. Prior to operation, traction was applied, the trochanter being pulled down 2 inches. The operative approach was similar to that in the first case. A small amount of bone was chiseled up from the upper rim of the acetabulum and a new acetabulum was reamed out from the thickened part of the ilium at that point. The upper end of the femur was placed in the site of the new acetabulum and the trochanter brought down on the outer side and sutured. A long plaster spica was applied with the limb in 25 degrees of abduction. After eight weeks the long spica was replaced by a short spica. When this was removed at the end of twelve weeks, active and passive motion and physiotherapy were begun.

The muscular tone of the atrophied limb has been restored to a marked degree, the shortening has been reduced to half, and the patient is now able to walk with a cane and has a fair amount of motion.

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# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLAHOMA, APRIL, 1928

NUMBER 4

## PRESIDENT'S ADDRESS

SOUTHEASTERN OKLAHOMA MEDICAL  
ASSOCIATION

C. C. GARDNER, M.D., PRESIDENT  
Durant

*Fellow Members of the Southeastern Oklahoma Medical Association, Gentlemen:*

My first recollection of the practice of medicine in the Choctaw Nation dates back to the year 1895. A moving picture of the scenery along the road of from then to now would be interesting and instructive: humerous and pathetic: gloomy and hopeful.

Those who have traveled along this road have seen flowers and trees; mountains difficult of ascent, with yawning chasms which seemed impassable, and with many deep caverns in which the monsters of ignorance, fanaticism and superstition hide from the light.

This road winds around the mountain and each mile of it is marked. Near some of the mile posts one can see in his imagination the bleached bones of the lambs who have been sacrificed at the altar of science and progress.

Along this road are thorny cactus plants, trees, some of which support poison ivy vines, and mistletoe. This road leads from places of very low altitude, where we find the marsh and the quick sand, to higher ground where the air is better, and always forward and upward.

Along the first twelve miles of this road we find many houses which herb doctors, almanac doctors, undergraduates, eclectics, homeopaths and many other paths, including the straight though (often narrow) allopath. At the lower end of this road, we find a multiplicity of practitioners with a multiplexity of theories. At one time, Lehigh had 6 or 8 doctors; Atoka, 8; Oconee, 2; Olney, 3; Tushka, 2, and although over 80 per cent of these are gone, I do not believe that I have noticed

any appreciable increase in the death rate.

The road from then to now extends nearly back to the beginning of appendicitis, and her two sob sisters, peritonitis and goodnightis, for just a few years before this, we heard of her. She was the evolution product of locked bowels, cramp colic, peritonitis and that most detestable, unmentionable blasphemy — congestion. How many times have I been told, when making insurance examinations, that Aunt Sue died of congestion.

It was on mile one of this road where I first met appendicitis; she was having cold refreshments in the form of an ice bag around her, she was waiting for maturity, hopeful that she would develop at least into a nice juicy abscess, and not get gangrenous. At this time she was recognized by pain over McBurney's point, and she is still and will continue to be best known by her steady companion, pain, pain — with or without fever — with or without leukocytosis.

It was on this road that we used to find many of the old-fashioned homeopaths and eclectics, some of whom entered such schools solely because the regular school of medicine had much higher educational requirements for admission. As they traveled up this road many of them threw off the thin garments of homeopathy and eclecticism, used all that the regular used, and prayer for more power.

But these same homeopaths and eclectics taught us of the regular, but some times narrow path, some mighty good things. They were opposed to minerals, especially mercury, and agreed with Dr. Oliver W. Holmes, now dead, (I am sorry to inform this society) that if all the calomel in the world was thrown into the ocean it were better for mankind and worse for the fish.

These same homeopaths and eclectics were possibly responsible for the wonderful rediscovery of the marvelous properties of our great external and internal medicine, *aqua purae*, the use of which, religiously and frequently, is hereby endorsed. Pick up in any old-time drug store a bottle of echinacea and you will observe that it should be given as follows:

\*Read before the Southeastern Oklahoma Medical Association, Durant, December 15, 1927.

Put 60 drops of same in a bucket of water and give a tablespoonful of this every 15 minutes, day and night. The echinacea bottle states that *echinacea* helps remove the broken down cells and products of katabolism, but I rather suspect that our old friend *aqua* is the more guilty of the two. And, nearly every homeopath and eclectic has hopped into the regular bandwagon.

On this road of from then to now, we pass along a row of miserable huts, closely chinked, with no evidence of a window anywhere. Above the doors of these should be written the words, "Abandon hope, all ye who enter here." In these are some dangerous reptiles, who cannot bear the light, their bellies are stuffed and they are comfortable. They want nothing—particularly light.

These monsters always agreed with every old woman's diagnosis and remedy. They permitted the old-fashioned woman to chew for her infant (thereby developing an immunity) and it certainly required some immunity to survive such an insult.

These monsters nursed and worried their victims by excessive and useless medication, and always had the alibi, "If I had been called a week ago, the patient would not have died." And, after death, he blamed it largely on the Deity, and sent flowers to the bereaved, which act gave him another opportunity to again impose on an innocent victim.

These monsters were finally forced over the precipice near mile post 12, but before the funeral dirge was played they made a determined stand and called for a meeting of the Choctaw-Chickasaw Medical Association, and I am told by one peered into that assembly, that, if seen now, the diagnosis would be *Bolsheviki*, and even a blind man could smell that diagnosis. Finally order came out of chaos and this heterogeneous multitude was thoroughly routed, and there fell of the treacherous stubborn, rebellious and ignorant ephraimites, on one day in 1907 (not forty and two thousand) but a goodly number of them.

The last one that I remember seeing was old Doc Skaggs. His son Ira's wife was sick and had a very peculiar ailment. This distinguished graduate of Green's diploma mill, from which he had a beautiful certificate, met me at the door and lisped, "she has septomania, she miscarried and Doctor T—and I curetted and washed her out, and she is out of her head and has high fever."

The delirious condition accounted for the mania and an Ivory soap per cent of his curettements were followed by sepsis.

I found that one of the children had died a few days previous from eating ground glass, the doctor reckoned. He was one of these fashioned quacks who avoided consultation, for he was always fearful of its possibilities. The Journal of the A. M. A. once described these anti-consultation doctors "as one who constituted judge, jury and frequently executioner." The patient mentioned had a typical clinical picture of typhoid fever. The child had died of hemorrhage, without medical assistance.

The road of from "95" to now leads from the time that we used to give digitalis when the pulse rate reached 140. We started the old-fashioned unstandardized Tr. four days too late in pneumonia. There was only one exception to this rule—Kelly of Louisville. His slogan was, "give them a teaspoonful, and if that does not do, give them a tablespoonful."

The road from yesterday should lead from the pitiful, starved, delirious typhoid patient to the typhoid vaccine. When it does not it should lead to caloric feeding of anything light, such as ice cream, baked potatoes, etc. And, we seldom see it's acidosis now.

This road leads from the old idiotic Braxton-Hicks method of temporizing with placenta praevia; that hopeless method, by which I lost the best friend I ever had, (the one who went down into the valley of the shadow of death to receive my trembling soul gates of life) to the modern Caesarian operation.

This road leads from the quick-sands of cholera infantum to diagnosis of the causative factors in and the prevention of anhydremia; from the barren desert of ileocolitis to the oasis of lactic acid and protein milk; from the badly infected soil of rickets, that soil which is responsible for adenoids, tonsillitis, bronchitis, bronchiectasis, asthma and even tuberculosis, to sunlight, real and artificial, and to vitamins, which we know something about, but do not use in sufficient quantities to prevent appendicitis and other itises.

Too many of us have forgotten that place along this road where we found the turnip greens and whole wheat, the coarse food or roughness so essential in maintaining our digestive and nervous equilibrium.

Let us now look up this road: can we not see within its next five miles the hospital in every county seat?

Should we not find in it every case of confinement—that hideous nightmare of every general practitioner of medicine, that monster from which each general practitioner escapes with the shout, “I am free, I have broken the chains.” How proud he is to say, “I am a surgeon and do not take confinement cases.”

Then, and then only can he sit down to the banquet table with no absolute certainty of being called away, then only can he be sure that he will not have to spend the whole night listening to the cries of some 16-year-old primipara, 17 miles away from town, and six or seven from any highway. Then only will he be able to attend the out-of-town medical association, then only will he have time to carefully examine his office patient, and not have to hurriedly write them a prescription for a snap diagnosis, and hasten to his obstetrical patient.

In my opinion, the practice of obstetrics has conducted nor too hasty, incomplete examinations by men half asleep, and to the reduction of well trained men to the dead level of mediocrity, than any one branch of medicine or surgery.

And, the time is about here when the old-fashioned practitioner, not afraid of the cold night air or the slippery road, will cease to go through difficulties and dangers to operate on some emergency case. Soon he can go and sleep and live and learn with his patient near him in the hospital.

The hands of the clock of time never turned backward. Gabriel will soon blow his horn, sounding taps for all those not in county seats with hospitals and clinics. The patient will come to the doctor—the doctor to the patient.

Mr. Ford said this about his new car: “It is a success because it has to be mathematically correct, a success because nothing else will do.” So it is with the future of medicine in this district, the county seat hospital and clinic must come, for men who have spent thousands acquiring their diploma must draw less dividends on their investment than the average switchman, or auto mechanic. They can’t afford to start in towns.

The practice of medicine in small towns is rapidly degenerating from one of the most noble, dignified professions to one of the most humiliating, exasperating—I am almost tempted to say, degrading callings known.

We are able to diagnose a few simple pathological conditions, but the patient has to go to the clinic to find out whether we knew or not. The surgeons and specialists’ praises are continually upon the lips of the laity, but that poor old friend who crawled out of a warm bed to see them when they had to have help, and that soon, is now considered a failure. If he knew much, he would be in the city.

The modern methods of treating children, with its lactic acid milk, oranges, cod liver oil and artificial sunlight, will decrease the general practitioner of medicine’s practice to a minimum. What infectious diseases he sees will be attenuated.

The tuberculosis sanatorium with its artificial pneumothorax, etc. will make it a crime to keep our patients at rest at home, and instead of locking the stable after the horse is stolen, measures will soon be taken to further get rid of potential tuberculosis by isolating the aged tuberculous grand parent, parent or relative who sit around by the fire in so many homes and expectorate at the fire place or stove, and usually not in them.

I am told by the T.B. specialists who ought to know, and do know, that the aged tuberculous often infects the child in the home. At adolescence, this child reaches a hill difficult of ascent; he has to grow and not use his resistance in combating T.B. infection. At 21, he is again in need of his vital reserves to meet the financial worries of starting a home with a young wife—knowing everything except how to cook.

So it would be a real economic saving to isolate the aged tuberculous and a few years would demonstrate a marked decrease in the incidence of juvenile T.B.C. These are a few factors which will, in the next five years, leave all except county seat towns, without an M.D. under 55 years of age, unless some action is taken by each county or its citizens.

With the cystoscope, X-ray, basal metabolism apparatus, the dentist and eye, ear, nose and throat and genito-urinary specialists busy, there will be practically no practice for the small town doctor except on cold and stormy nights when the patient can’t get away from home.

## THE KAHN PRECIPITATION TEST IN SYPHILIS\*

R. L. HICKMAN, M.D.  
Anesthetist and Bacteriologist  
Evergreen Sanitarium  
DURANT

There is now a blood test which is destined to play an important role in public health by making possible a greater control of syphilis than has heretofore been achieved.

It has been estimated that something over two million people in the United States are infected with syphilis. And, in many other countries, the number of infected individuals in proportion to the population is far greater.

Syphilis is an especial menace to public health because during its most infective stages the patient is not sufficiently ill to be confined to his home. In diphtheria, pneumonia or typhoid fever, for example, the acuteness and the severity of the attack sends the patient to bed and this enforced quarantine is an important protection to the community. In syphilis, however, the patient moves about in the community, doing things that should not be done, thus daily endangering the health of his associates.

A blood test is of utmost importance in the detection of syphilis. The disease, during certain stages, manifests itself in symptoms of every conceivable form, making its diagnosis, without a blood test, extremely difficult. Again this difficulty is intensified by the fact that most patients will not admit exposure to the infection. These difficulties are in addition to the hereditary factor.

At present there are two principal tests: the Kahn which is a precipitation test, and the Wassermann which is a complement fixation test. It is my purpose to show the superiority of the Kahn test for laboratory purposes.

To understand these tests, it will be necessary to see what immunity is. "Immunity is that power by means of which disease organisms are prevented from gaining a foothold in the human or animal body, or their harmful products neutralized, or they themselves destroyed."

As a result of an attack of a disease or in response to the stimulus of the injection of the causative organism or its products,

we have developed in the man so infected, or injected certain specific properties antagonistic to that organism, which can be demonstrated in the blood serum or other body fluids. The general term *antibody* is applied to this antagonistic power.

There are four powers or antibodies; these are the known ones, all four of which may be present in equal or varying degrees in one individual: (1) Agglutinating power by which we mean that antibody which causes evenly distributed organisms to come together and form clumps. The Widal is an agglutination test. We can also call this agglutination power "immune bodies of the second order." (2) Precipitating power, by which we mean the ability of a serum possessing it to cause precipitates in a clear solution. The Kahn test is a precipitation test, or more properly a flocculation test. All medico-legal tests are based upon this principle. (3) Opsonic power, by which we infer the presence of an antibody which so alters the resistance of bacteria that the phagocytes ingest them. (4) Bacteriolytic power, by which we mean that which brings about disintegration or lysis of a specific organism.

The antibody in an immune serum responsible for the phenomenon of precipitation is called a precipitin; the substance or antigen responsible for the production of this antibody is known as precipitinogen. The precipitate is the end result. Precipitins are probably not truly protective antibodies, like antitoxins and lysins, but they are quite similar to the agglutins in being products of cellular activity, and they are of value chiefly as indicators of this general antibody formation. They may, however, be concerned in preparing their antigens for the destruction and solution, just as opsonins prepare cells for the phagocytosis; but precipitins themselves possess no appreciable curative or protective virtues, and are of value chiefly in diagnostic procedures.

Wassermann in 1906, was the first to utilize the phenomenon of Bordet and Gengou in the serum diagnosis of syphilis. Properly speaking the term "Wassermann Reaction" should be applied to the original method of Wassermann and not to the many modifications; but practically it has become synonymous for all laboratory tests for syphilis, or better for the complement fixation tests, as the globulin, mastic and colloidal gold tests (Lange's) which are used in the determination of, or in the differential diagnosis of paresis, cerebro-

\*Read before the Southeastern Oklahoma Medical Association, Durant, December 15, 1927.

spinal lues and tabes dorsalis, and are not complement fixation tests.

The Wassermann employed five reagents: (1) Patient's serum; (2) Complement, from the guinea pig, as the native complement in the patient's serum is killed by inactivation, 56 degrees C. for one-half hour; (3) Amboceptor, made from the rabbit; (4) Red blood cells, either sheep or human; (5) Antigen. The first antigen was made from the heart muscle of a luetic fetus; now antigens are made from beef hearts.

The Wassermann is a lengthy and indirect method, as complement, amboceptor, and red blood cells are ingredients unrelated to syphilis. In the Kahn test the patient's serum and the antigen are the basis and only ingredients, excepting normal salt solution.

Now as to the percentages of Wassermann positive with known syphilis, McDonagh says the Wasserman is positive 73.9 per cent in primary and 97 per cent in secondary cases, and in tertiary cases only 70 per cent are positive. According to the Board of Health of Michigan there is a 99.4 per cent agreement between the Kahn and Wassermann. Certain cases of syphilis exhibit a persistently positive Wassermann, notwithstanding treatment that is considered standard practice. The same can be said of the Kahn. These cases are few however, but when a patient is persistently positive after treatment, or Wassermann fast, he is considered to have grave, rather than trivial syphilis.

In the state of Michigan after a comparison of 160,000 tests paralleled with the Wassermann in their own laboratory in Lansing and in the University Hospital in Ann Arbor, and in many thousands of other tests, investigators found the Kahn more sensitive in primary and treated cases of syphilis. So it was adopted as standard by the Health Council of Michigan in October, 1925.

The Medical Department of the U. S. Navy adopted the Kahn as standard for numerous reasons, but one of the main reasons was that the test could be performed aboard ships without guinea pigs, rabbits, or sheep; and the Kahn antigen remains stable in any climate.

In a letter dated October 5, 1927, from Dr. R. L. Kahn, he stated that the Kahn is the standard in Michigan, Illinois, West Virginia, Province of Nova Scotia in Canada and in the City Health Departments of Detroit, St. Louis and Memphis,

and in all the laboratories of the United States Navy.

A pamphlet enclosed with the letter giving a report on 300,000 Kahn tests indicates this test is a dependable laboratory method in the diagnosis of syphilis.

The following is from the A.M.A. Journal of March 19, 1927: "Hopkins and Brunet present a summary of work done on approximately 135,000 serums by 35 observers from which mass of material they deduct the following facts: (1) The Kahn appears to be as specific as the Wassermann; (2) It appears equally sensitive in other cases and more sensitive in primary and treated cases; (3) It is infinitely simpler to perform; (4) It is cheaper and less time consuming, meaning that the physician can secure reports sooner."

In an emergency case such as in a blood transfusion, a Kahn report can be made in an hour.

Now, if we accept these deductions we are put squarely up to the logical conclusion, which is that if we perform only one test in the laboratory, that test must be the Kahn and not the Wassermann. The physician will then have to realize that the Kahn is a standard and not adjunct and supplementary to the Wassermann.

I would like for Oklahoma to be the first state west of the Mississippi to adopt the Kahn as a standard test for syphilis.

## THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS\*

LORENZ W. FRANK, M.D.  
DENVER, COLO.

It would seem that nothing could be added to so shop-worn a subject as the diagnosis and treatment of pulmonary tuberculosis; however, an occasional resume may be helpful in keeping before us the proven and tried means which we have at our disposal for combating this disease.

A Diagnostic Standards Committee appointed by the president of the National Tuberculosis Association in 1925 concluded that there are five essential criteria of diagnosis of pulmonary tuberculosis:

1. A history of hemoptysis of one dram or more without any other known cause.
2. A history of an otherwise unexplained pleurisy with effusion.

\*Read before the Osage County Medical Society, December, 1927.

3. Definite rales which persist for a week or more in the upper half of the chest.
4. Definite evidence of parenchymal changes seen in the X-ray film, located usually in the upper half of the chest.
5. The demonstration of tubercle bacilli in the sputum on two or more occasions.

The first and second constitute merely presumptive evidence, the third and fourth, while at times misleading and possibly due to other causes, nevertheless very strongly indicate pulmonary tuberculosis. The fifth is practically always conclusive evidence of pulmonary tuberculosis, although it must be borne in mind that in rare cases, tuberculosis of the tracheobronchial lymph nodes without involvement of the lung parenchyma gives rise to a positive sputum.

While the above embodies most of the evidence necessary for a positive diagnosis, it is of great importance to take cognizance of other less striking signs and symptoms and to evaluate them in each individual case. To do this it is best to follow a fixed plan and to gather all the evidence possible before rendering an opinion. Occasionally deviation from this course may be necessary, but a routine which includes a careful history, general as well as physical examination of the chest, X-ray examination, inspection of the larynx, laboratory findings, (sputum, blood, urine) and in some instances special laboratory procedures, as well as an adequate period of observation, should be adhered to whenever possible.

Modern laboratory procedures should not be relied upon to the neglect of the older clinical methods, namely accurate history taking and physical examination. It requires as much skill to elicit a good history as it does to make the physical examination; this skill can only be attained by long years of patient and painstaking practice, in fact as much practice as it takes to properly interpret what is heard with the stethoscope; because this is tedious, it is often neglected. The history may give the only clue to the diagnosis.

In taking the history the patient should first be allowed to tell his story in his own way. This gives the examiner time to study the patient's mental make-up, whether he exaggerates or minimizes his symptoms, is pessimistic, or affected with (*spes phthisica*), how he feels toward his previous medical advisers, etc.; in short, a

period of practical psychology. A long recital of symptoms is here unnecessary, but it might be well to stress a few of the more important ones, especially those that can usually be elicited if a tuberculous infection is present. The onset may be insidious without any apparent cause, more often an acute cold seems to be protracted or the tuberculous infection manifests itself after an acute infectious disease such as measles, pneumonia, typhoid, etc.; often it is activated after pregnancy or a miscarriage. Unexplained general weakness is perhaps more frequently encountered than any other symptom, which is often accompanied by a loss of weight, though in some cases of early tuberculosis to a very slight degree. Some type of cough is usually present though it may be hard for the patient to admit it. I have had patients emphatically deny that they coughed, and in the next breath be seized with a violent paroxysm of which they may or may not have been conscious. So far as I know there is nothing characteristic about the cough of the tuberculous, it may be slight, dry and hacking or so violent as to cause emesis. The expectoration, of course, depends upon the amount of destruction of lung tissue, mucous, mucorpurulent, or purulent, at times blood-streaked and varying in amount. Fever is usually of the hectic type, though in some instances the highest temperatures are recorded in the morning. It may be remittent, intermittent, or septic in character. If there is no fever at the first examination the patient may be instructed to walk to the office for a subsequent one and if the temperature is taken immediately upon his arrival it will often be found that he has fever, sometimes surprisingly high. The pulse is accelerated with the fever and both are reduced by rest. If in a given case tachycardia persists in spite of rest, so that the pulse rate remains at 120 or more, hyperthyroidism must be excluded.

The appetite may remain normal in spite of prolonged fever, and patients who are having complete rest may gain in weight temporarily in spite of a progressive lesion. There may be almost any kind of digestive disturbance as an early symptom of pulmonary tuberculosis. Gastric hypo and hyperacidity have in my experience been about evenly divided. I have had one case in which there was simultaneous hemorrhage from the lungs and from a duodenal ulcer. Prolonged diarrhea may mean intestinal tuberculosis or amyloidosis. It has been shown at autopsy that there is in-

testinal tuberculosis in about two-thirds of all cases of pulmonary tuberculosis whether there are symptoms or not. Prolonged hoarseness calls for a careful examination of the larynx; however, this symptom does not always mean tuberculosis, it may be due simply to cough and the expectoration of irritating sputum.

Hemoptysis is a common symptom, though not as serious as it is terrifying to the patient. Fishberg, quoting Williams, concludes that when we say that hardly one out of a thousand deaths due to tuberculosis is caused directly by hemorrhage, we are as near the true figure as possible; hardly two per cent of tuberculous patients who bleed succumb to this accident. One often hears that patients are better after a pulmonary hemorrhage, and it is true that this is sometimes the case, but the other extreme, namely a fatal broncho pneumonia may just as well supervene. At times hemoptysis is the only demonstrable sign or symptom in mild tuberculosis and repeated examination of the bloody expectoration is necessary before tubercle bacilli can be demonstrated.

A pluerisy with effusion which is not post-pneumonic or due to focal infection usually proves to be tuberculous. If a fistula in ano or other extra-pulmonary complications are discovered, the lungs need careful investigation since they are usually the seat of the primary infection. The question of primary and secondary infection of the lungs cannot be gone into in this paper; it has been fully covered by such writers as Aschoff and Krause.

Urinary symptoms should not be neglected and in this connection it must be remembered that meningitis frequently follows tuberculosis of the genito-urinary system.

In taking the past history such things as unexplained fevers and glandular enlargements in childhood are important. Whether there is some inherent characteristic in some families which predisposes to tuberculosis or whether the same living conditions and environments are responsible we do not know. At any rate, we do know that entire families have been wiped out by the disease.

#### PHYSICAL EXAMINATION

A general physical examination is first in order, inspecting every part of the body, and this is supplemented by an especially careful examination of the chest. The heart is first investigated, recording also the pulse and blood pressures. It is not my

purpose to describe all the physical signs found in advanced tuberculosis, such as those found in cavity formation, consolidations, effusions, pneumothoraces, etc., but to stress the findings in two conditions which seems to me to be very important. The most constant sign of early tuberculosis in my experience is the presence of moist rales heard at the end of inspiration immediately after a slight cough (cough, not clearing of the throat) persisting on repeated examination and most commonly found in Kroenig's area. This area is about the size of a dollar and located at the midpoint of a line drawn from the spine of the seventh cervical vertebra to the spine of the scapula. At this point there is often also some impairment of resonance, though this may be masked by emphysema around the lesion, and in this way the disease may be located in the wrong apex. The other condition is that of fibrosis which is characterized by a paucity of physical signs. The chest may be hyperresonant and the breath sounds of a soft blowing character which is easily overlooked. Extensive fibrosis, even to the point of marked secondary bronchiectasis, may produce no abnormal physical signs. Here a correlation of the physical findings and the X-ray findings is especially valuable; the physical examination should be made before the X-ray film is viewed.

A highly profitable method of studying physical diagnosis is to compare autopsy findings with previously recorded physical and X-ray signs. Useful data is added to the physical examination by the estimation of the vital capacity and the basal metabolic rate.

#### LABORATORY EXAMINATIONS

*Sputum.* The Ziehl-Nielson method of sputum examination is still the most practical and reliable. Repeated examinations should be made if tubercle bacilli are not found the first time; the patient should be instructed in regard to the collection of the sputum and impressed with the fact that the sputum should be coughed up from the lungs and not obtained from the nose or throat. Occasionally the sputum is treated with antiformin or guinea pig inoculation is resorted to. Corper has stated that 1,000,000 tubercle bacilli must be present in a cc. of sputum before they can be demonstrated on an ordinary slide.

*Urine.* A routine urinalysis should be a part of the examination of every tuberculous individual; if the symptoms warrant it, the sediment should be stained for tubercle bacilli by the acid-alcohol method.

The urochromogen test has been employed by some as an aid in prognosis.

**Blood.** The blood in early tuberculosis is usually normal although with advance of the disease some form of secondary anemia is present. The blood picture in advanced tuberculosis may closely mimic the various anemias. If the disease is progressive and fever is present, there is usually a moderate leucocytosis of the polymorphonuclear type 12,000 to 13,000, but with clinical improvement there is an increase of mononuclear cells usually a lymphocytosis, with a decrease of the total number of white sells.

A blood Wassermann test should also be a part of the routine.

The sedimentation rate of the red blood cells and the complement fixation test are refinements that can scarcely be employed in private practice and are of doubtful value in institutional practice.

Tuberculin tests should not be relied upon for a diagnosis. They are positive alike in latent and active tuberculosis, and indicate tuberculous infection broadly speaking, but not necessarily tuberculous disease.

#### ROENTGEN EXAMINATION

X-ray films taken with a rapid technic and viewed in the stereoscope will reveal exceedingly small lesions; however, great care and judgment is necessary not to see too much, or to interpret harmless shadows as pathologic lesions. The early tuberculous lesion is usually a feathery congestive mottling seen in the apex or upper lobe towards the periphery and having a corresponding drainage shadow at the hilus. The very great value of the X-ray as a diagnostic agent in all diseases of the chest, in early as well as the more advanced conditions, need not be commented upon.

To complete the examination the nose and throat should not be neglected and particularly does this apply to the larynx; the teeth also are important. If there are symptoms pointing to a surgical condition, a surgical consultation should be had.

In a few instances after some or all of these measures have been employed, there may still be some doubt as to an absolute diagnosis. It may then be helpful to use exercise tests, that is, to take the temperature immediately after and three or four times at half-hour intervals. If there is actually a tuberculous infection present, fever will usually make its appearance after a reasonable time. Prolonged clinical observation and repeated examination of-

ten brings to light conditions that were not at first apparent. Let me point out again the importance of the history, and the marshaling and reviewing of all of the facts obtained from the physical and laboratory examinations before arriving at a conclusion.

#### TREATMENT

An early diagnosis is to be regarded as an essential part of treatment, but in our zeal to make an early diagnosis extreme care should be used so that non-tuberculous cases, such as lung abscess, bronchiectasis, foreign bodies in the lungs, chronic bronchitis, asthma, hyperthyroidism, pellegra, and various diseases produced by fungi, etc., are not labeled tuberculosis.

After the diagnosis is definitely established it is important that the affected person be removed from his home, not only to avoid infecting other members of his family, but to secure a change of environment for the patient and to facilitate the cure away from the hampering influence of his relatives and friends. Undoubtedly the best place is a properly conducted sanatorium located in a favorable climate (which, if not the panacea it has been said to be, is a decided help for this class of patients.) The sanatorium routine should be strict, educational as well as therapeutic. Popular lectures should be given stressing the importance of prophylaxis and their conduct after leaving the institution, for their own benefit and that of others with whom they may come in contact. Meanwhile the fundamentals of treatment, namely rest, fresh air, good food, personal hygiene, and the cultivation of a cheerful disposition should be so ingrained that they will become automatic under the ordinary conditions of life. The patient should not be kept in the sanatorium too long, generally speaking, in one year he should learn almost everything the sanatorium has to offer. This may be modified if the patients have no other place to go and must be kept in the institution for long periods or until they no longer have tubercle bacilli in the sputum. In many instances this is impossible, but a properly trained consumptive is far less a menace than those who do not know that they harbor the germs. Krause<sup>4</sup> has made the statement that if every person who has tubercle bacilli in the sputum were confined in a sanatorium bed, tuberculosis would soon disappear, but he realizes that it will be a long time before this ideal will become a reality, so we can go on building sanatoria and if in later years they are not

needed for treatment of tuberculosis, good use can be made of them for the treatment of rheumatic fever and heart disease which seem to be on the increase. Even with the non-specific methods used, the mortality from tuberculosis which was 208 per 100,000 of population in 1904 has been reduced to 92 per 100,000 in 1924.

Most of the special aids used in the treatment of tuberculosis aim at putting the affected part to rest; postural methods and various types of apparatus designed to limit the respiratory excursion have been used, but the most useful and popular procedure is artificial or induced pneumothorax. This operation was first suggested by James Carson in 1833 but was forgotten until it was revived as a therapeutic measure by Forlanini of Pavia in 1894. The late John B. Murphy independently of Forlanini injected nitrogen into the pleural cavity for tuberculosis in 1893 and for a time advocated its use as soon as the diagnosis was made. Brauer and Spengler took it up in Germany and for a time used the open methods, *e. i.* they made an incision between the ribs down to the pleura and injected the gas through a cannula. At the present time the puncture method of Forlanini is used almost exclusively. The object of the operation is to compress the affected lung by introducing into the pleural cavity a sterile and harmless material. For a long time nitrogen was used, then oxygen, but of late years it has been found that filtered air is just as good or better than anything else. The technic of the operation of induced pneumothorax is simple if everything goes well, the all-important point being that the air is injected into the pleural cavity and not into the blood vessels or tissues.

The most popular apparatus used is the Floyd-Robinson or some modification of it. It consists essentially of two glass bottles connected by glass and rubber tubing so that by siphonage the water in one bottle displaces the air in the other out through the tubing to the needle in the chest. In the circuit is placed a water manometer which is connected with the tubing by a stop-cock so that the oscillations of the manometer can be observed before the air is turned on. This is a most important part of the procedure and tells absolutely whether or not the point of the needle is in the pleural space and if it is safe to inject air. The manometer should show oscillations of at least 3 or 4 cm. of water pressure before the air is allowed to flow in. The needle should be a specially

constructed one, about 1½ to 2 in. long and of not too large a caliber; it should have a fairly blunt tip and be equipped with a stylet, a two-way stop-cock and a side arm to which the tubing is attached. The puncture is made between the ribs in an area anesthetized with a 1 per cent solution of novocain (some use a small caliber needle without anesthesia) usually in the axilla or posterior axillary line, but any safe area of the chest wall can be used. The patient is placed upon the well side with a pad or pillow under the chest to spread the ribs of the side to be compressed. The patients should be reassured and cautioned not to cough without first telling the operator so that the water will not be expelled from the manometer. The needle should be introduced carefully through the chest wall. A shield is sometimes used to prevent plunging the needle into the lung tissue. As the needle pierces the parietal pleura, a peculiar popping sound is heard, to the feel of which one soon becomes accustomed. The needle should be introduced and withdrawn at right angles to the chest wall; on no account should it be given a rotary motion since this may tear the lung and produce serious hemorrhage or spontaneous pneumothorax. When the needle is in place the stylet is removed and the stop-cock turned so that the needle is in communication with the manometer, if then with inspiration the water rises in the right arm of the manometer, we have a negative reading, and if the oscillations are satisfactory, *e. i.* from 3 to 4 or more cm. we close the manometer and turn the stop-cock which allows the air to flow in. Not more than 300 cc. of air should be injected at the first filling, the amounts and frequency of subsequent fillings are determined by the behavior of each case, but very large amounts of air are now never injected at a single operation and high positive pressures should not be produced. Many interesting and atypical manometric readings will be encountered but their explanation cannot be gone into here. All this is of course carried out with strict aseptic precautions.

*Indications.* The disease should be confined largely to one side, although some involvement in the contralateral apex or upper lobe should not be looked upon as a strict contraindication. Indeed, with compression of the most involved side the lesser lesion on the opposite side often shows improvement. Formerly this operation was reserved for advanced and hopeless cases as a last resort, but of late the pendulum

has swung the other way and it is now often used in fairly early cases. However, it is fairly well agreed upon at present, that the best results are obtained in the chronic moderately advanced progressive cases in whom the disease shows no tendency to become quiescent but who also have some degree of resistance.

Sometimes in the more acute cases the results of pneumothorax are very striking. The symptoms subside in a few weeks; fever, tachycardia, night sweats, cough and expectoration disappear and the entire course of the disease is changed. The improvement, however, is not likely to be so permanent in this class of cases as it is in the more chronic types. Hemorrhage is another indication. It is of little value in the fibroid and miliary types.

**Contraindications.** Extrapulmonary complications, such as intestinal and laryngeal tuberculosis, were formerly looked upon as contraindications, but it has been found of late that a good lung collapse often also improves these conditions and is therefore used more freely. Advanced heart, blood vessels, and kidney disease are contraindications.

Pleural adhesions are the bug-bear of this procedure and cause more failures than anything else, if they are present to any extent; they constitute a most serious obstacle and defeat the operation from the outset. Usually it cannot be determined without a trial whether extensive pleural adhesions are present or not. They are less likely to be present in the acute than in chronic cases. If after several fillings long strand-like adhesions prevent a satisfactory collapse, they can be freed by cauterization through a thoracoscope after the method of Jacobeus, but only in a very limited number of cases. Adhesions form more readily over the diseased areas of the lung, so that we may have a cavity in the upperlobe, which is prevented from collapse by dense adhesions, while the rest of the lung which is only partially infiltrated may be collapsed, but even so, the immobilization of the lung obtained in this way may be of some benefit. Occasionally we are fortunate enough to get what is termed a selective collapse. Given a free pleural cavity, the diseased portion of the lung have lost some of their elasticity and are therefore compressed more easily than the healthy lung tissue; this is ideal, though not often attained or maintained for any length of time.

**Complications.** Of the immediate complications the most serious is the introduc-

tion of air into a blood vessel producing air embolism, while this is not always fatal it is a very terrifying accident. Pleural shock is looked upon by some as air embolism, by others as a reflex spasm of the cerebral vessels due to puncture of the pleura. Hemorrhage or spontaneous pneumothorax (accidental) may result from injury to the lung. At times the air works its way back along the needle puncture into the subcutaneous tissues and produces an emphysema, which is usually not serious and passes away in a few days. Of the more remote complications, pleurisy and pleural effusions are by far the most common and important. An effusion occurs sooner or later in about 50 per cent of the cases; most of them are serous but a certain percentage become purulent. An exudate occurs in almost direct proportion to the severity of the disease. If mixed infection does not supervene the prognosis of these effusions is fairly good. They should be treated by aspiration and replacement with air.

As has been stated, the immediate results in cases in which a satisfactory collapse is obtained are wonderfully good and sometimes even spectacular; but this cannot always be said if the cases are followed for a long time. The pneumothorax should be maintained for long periods from one to five years and it is an extremely difficult problem to know when it should be discontinued because we have no sure way of knowing when the lesions are healed. If the cases are carefully selected the ultimate results are better with than without pneumothorax treatment.

Statistics are of little value here as usual, because of the widely varying clinical condition of the patients treated, but a general idea of the results can be gotten from the large series of cases reported by Matson, Matson and Bisailon<sup>1</sup>. They report a summary of the character of the pneumothorax and the results of treatment in 600 cases. Of the 235 cases with a satisfactory collapse 114 are clinically well, 44 are arrested, and 52 are dead. Of the 245 cases with a partial collapse 28 are clinically well, 29 are arrested, and 142 are dead. Of the 120 cases in whom no free space was obtained 7 are clinically well, 11 are arrested, and 80 are dead, showing the greater proportion of favorable results obtained in the cases with a satisfactory pneumothorax.

If in a certain percentage of carefully selected cases it may still seem to be desirable to compress one lung, even though

artificial pneumothorax has failed on account of extensive adhesions or for other reasons, we may then have recourse to one of the thoracoplastic operations. Many such operations have been devised and used with varying degrees of success, but the most popular one and the one which has best stood the test of time is the Wilms-Sauerbruch extrapleural paravertebral thoracoplasty. Briefly this operation consists of the removal of sufficient portions of the XI to the I ribs (including the I and eleventh ribs) from below upward in two stages. A long J-shaped incision extends from the neck downwards about 3 in. from the spine and is curved laterally below at the costal margin. From 1 to 6 in. of the ribs are resected subperiosteally, care being taken that they be removed all the way to the tips of the transverse processes of the vertebrae. Small pieces of ribs removed close to the spine cause much greater compression of the thorax than pieces removed farther laterally. Usually the seven long ribs are resected at the first operation and the remainder at a second operation from two to three, but not more than six weeks later, because of the rapid bone regeneration. Some doubt may exist as to the wisdom of resecting the lower ribs first because of the danger of causing retention of the sputum, especially if cavities are present in the lower lobes. This may be overcome by resecting the upper ribs first or by doing a preliminary phrenicotomy. The operation can be done under nitrous oxide and oxygen or ethelene anesthesia, but many operators prefer paravertebral blocking with novocain.

Given a case which is a suitable surgical risk, the indications and contraindications are the same as for artificial pneumothorax, but there is the added advantage that the thoracoplasty can be performed in those cases in which there are extensive pleural adhesions or in which pneumothorax has been unsuccessful or discontinued for other reasons. The most important point is the proper selection of cases; and here the closest cooperation between surgeon and internist is highly essential. Both artificial pneumothorax and thoracoplasty have some advantages and disadvantages. Patients will submit much more readily to pneumothorax than they will to the more serious operation. Moreover, if the disease lights up in the contralateral lung, the pneumothorax can be discontinued or aspirated and the lung al-

lowed to re-expand, the degree of re-expansion depending upon the length of time that it has been compressed and upon the amount of pleural and intrapulmonary scar tissue that has formed. The thoracoplasty on the other hand, is permanent and the collapse may not be so complete as in the pneumothorax.

A thoracoplasty may be better for patients who cannot or will not continue the pneumothorax treatment for the long period of time necessary, nor is there the danger of effusions or gas embolism. Thoracoplasty is a serious operation usually undertaken in patients who have been ill for a long time and according to Alexander<sup>4</sup>, the mortality is 13.2 per cent during the first two months from causes directly or indirectly due to the operation. He further states that surgery has favorably influenced 61.2 per cent of the patients reported as operated upon during the past seven years and has actually cured 36.8 per cent of them. However, we must look upon these clinical cures just as we look upon the cures in tuberculosis affected by any other means and use every beneficial agent available to keep them cured. Both thoracoplasty and induced pneumothorax can, with advantage, be supplemented by a phrenicotomy. Through a small incision in the neck parallel to the clavicle or along the posterior border of the sterno-cleido-mastoid the phrenic nerve which lies on the scalenus anticus is exposed. It is identified by pinching, which produces either pain in the shoulder, a diaphragmatic reflex, or both. It is then grasped by two forceps and cut between, the distal end is then rolled out upon the forceps, it usually tears after 2 or 3 in. have been drawn out of the chest. At times a complete exaeresis is possible, which also destroys the accessory phrenic nerves and prevents regeneration. One side of the diaphragm is in this way paralyzed and in a few days it slowly rises into the thoracic cavity for a distance of 2 or 3 in. and compresses to some extent the lower lobe of the lung.

In the time allotted only the high-lights can be mentioned, and very few of the interesting problems that arise in connection with these forms of treatment can be discussed. But it is to be hoped that as our knowledge increases and as refinements are perfected, that these aids in the treatment of tuberculosis will be made available for a greater number of patients.

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## PULMONARY TUBERCULOSIS FROM THE VIEW-POINT OF THE X-RAY\*

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The purpose of an X-Ray examination of the chest is to locate and describe abnormal densities and thus detect pathological changes. One must be able to identify tuberculosis and differentiate it from other lesions of the chest, to classify it and arrive at findings which will give a workable basis both as regards prognosis and treatment.

It is well recognized that there are no pathognomonic physical signs of lung tuberculosis. However, radiologists believe that their particular contribution to the physical examination of the chest, when skillfully interpreted, will more accurately indicate the nature of a lesion as well as its location and extent than will any other part of the examination. Since the criterion which the physician accepts in physical findings as suggestive of tuberculosis and those which point the radiologist to this conclusion are based on the same fundamental of anatomy and pathology, there should be no antagonism. The radiologist must always remember that his contribution to the physical examination is supplementary even on those occasions when the supplement is more important than the real meat of the examination.

The fundamental investigations of Miller and Dunham, many years ago, regarding the architectural structure of the lung, the method of invasion by tubercle bacilli and the pathology produced pointed the way to the subsequent observations that tuberculous infection and infection by other bacterial invaders produce different

kinds of shadows in the lung field. If we will base our interpretations upon the fundamental investigations as laid down by Miller and Dunham and to which there has been no material addition, we will be able to differentiate the etiological factors with a certain degree of success. I am of the opinion that whenever we depart from the fundamentals mentioned and attempt to interpret shadows as tuberculosis without any proper regard for the underlying pathology we will be working on a very poor foundation which will lead us to make findings of an erroneous nature.

It is known that tuberculosis invades lung tissue through the lymph channels, therefore, that the infection first surrounds the lobules because the lymphatic vessels enclose each anatomical lung unit very much as a fish net holds its contents. The smallest visible tuberculous lesion therefore is a dim outline of a secondary lobule, with its congested lymphatics and beginning consolidations, such a lesion is essentially parenchymatous since the lung parenchyma fills all the space between the hilus and the pleura, the tuberculous density may occur anywhere in the lung field. The lesions have a definite relation to the bronchial tree and this relation can be traced by the striation densities which mark the blood vessels accompanying the bronchi. In instantaneous films, with the very finest detail, we can make out the extremely delicate shadows surrounding the involved lobule within which is an area of increased opacity. On the usual film there is only a blurring or haziness more or less sharply outlined from the surrounding tissues being roughly triangular at the lung periphery, though with varying shapes when located more or less deeply within the lung.

In addition to its definite character, the density is, for all practical purposes, an upper lobe shadow. Without discussing the reasons for this, it is a fairly safe rule that tuberculosis does not invade the basal regions until the local or general resistance has been lowered by some accompanying infection.

Therefore in differentiating the lung shadows, with reference to their etiology, we have two fairly safe guides: one is the location of the density, the other is its structural peculiarity. The pyogenic infections of the lung are homogeneous as a rule, and invade along the bronchial mucosa, spreading from within the structural units, so that when developed to the stage

\*Read before the Osage County Medical Society, December, 1927.

of visibility, they are relatively more opaque than are tubercular shadows. Of course after a consolidation is well established the shadow will be the same whether the invasion is from the periphery through the lymphatics or from the center, as in pyogenic infections. However, it is very seldom that we find isolated tuberculous consolidations without adjoining lesions presenting typical characteristics of early tuberculosis. Tuberculous consolidations when complicated usually spread by continuity and coalesce, while those of other infections are more likely to be discrete, even when quite numerous.

When pyogenic or influenzal infections occur in the tuberculous lung, their shadows do not differ materially from similar densities in the non-tuberculous lung. In the hitherto normal lung, such infections are prone to involve the basal or hilus regions so that accentuation of the hilus densities, or discrete densities in the hilus region, or discrete or irregular densities at the base, should be interpreted as probably non-tuberculous. When the same type of shadows occur in a tuberculous lung, they should again be interpreted as probably non-tuberculous. If we have a cavity in the upper lobe of one lung and it becomes secondarily infected, we will soon find in the parenchymatous tissue surrounding this cavity shadows which, if found elsewhere in the lung, we would undoubtedly regard as the densities of non-tuberculous lesions. It is just as reasonable to interpret them as lesions produced by secondary invaders of the cavity as it is to regard them as tuberculous densities. In many cases an analytical interpretation is not possible, because a tuberculous caseating area soon becomes secondarily infected, and areas of secondary infection frequently become tuberculous, so that the shadows become so interwoven that the best we can say is that the method of extension and possibly the character of isolated densities suggest the influence of secondary infection complicating the tuberculosis.

Many of these densities which we attribute to non-tuberculous infection resolve and disappear. It may be said here that a point of controversy is whether a true tuberculous lesion, after developing into the stage of visibility on the X-ray film, will entirely resolve, leaving no trace of the shadow. It is my belief that a tuberculous area will not entirely heal by resolution, but there will always be some degree of

cicatization with resulting fibrous tissue changes that are visible on the X-ray negative.

It is unfortunate that roentgenologists do not use the same terminology in interpreting. Since the art of diagnosis of tuberculosis of the lungs has not yet reached the point where clinical and pathologic activity, physical signs and roentgenographic findings can be accurately correlated, it would be wise not to use the terms active and inactive in our interpretations, but to substitute recent and not recent. The terms "progressive" and "retrogressive" are also helpfully applied in subsequent reports on serial roentgenograms.

X-ray examination has been of the greatest service in the early diagnosis of tuberculosis not only because it has given a convincing demonstration that the X-ray can and does reveal unsuspected deep seated lesions, but because properly used, it becomes an unexcelled method of instruction in physical diagnosis of the chest.

#### CONCLUSIONS:

1. The tuberculous lesion very early in its development presents certain distinctive characteristics recognizable in the roentgenogram.

2. The differentiation of symptom producing tuberculous lesions is a clinical as well as a roentgenological problem.

3. The roentgenogram frequently presents the only objective signs of disease and the roentgen study of every case is of the utmost importance from the standpoint of diagnosis and of prognosis.

4. The coordination of positive roentgenographic data with the clinical and physical findings is very important.

5. Any abnormal shadows confined to the basal region alone, whether due to an accentuation of the bronchial tree ramification or whether they are entirely isolated; whether recent or old, unless they present the typical characteristics of tuberculous infection, we feel should be interpreted as non-tuberculous in character.

6. The peribronchial thickening in the hilus densities in the adult are usually non-tuberculous in character. In the child it is practically impossible to differentiate the shadows of hilus tuberculosis from those of non-tubercular lesions.

7. The practical value of differentiating whenever possible the shadows of tuberculosis from those of a complicating infection should be obvious.

8. Aside from these factors of practical value to the clinician it is expected of the radiologist that he will go as far as possible in the study of and interpretations of types of pathology examined by him and nowhere in the body can this analysis of pathology be carried so far as in the study of lung shadows.

### PERSONALITY TRAITS AND THE INSANITIES\*

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In considering personality traits people may be divided into two great classes. One great class touches the world at many, many points. They make a flight into reality as an attempt at settling the problems of their life. They become great leaders and are constantly dealing with their environment. They are great leaders of pioneer movements and make a great effort at dominating all situations.

The other great class of people who are also normal represent those apparently solid, quiet thinkers who deal very largely with their own thoughts. Their day dreams are very vivid. They take that which they find and build into a great fabric of science, mechanics or philosophy. They usually represent the great inventors.

Dr. William A. White of Washington, uses the terms "extroversion" and "introversion," as also Professor C. G. Jung of the University of Zurich. Dr. White says, "Extroversion and introversion are only different aspects of life. Whole civilizations partake of the character of one rather than the other. The Eastern civilization is essentially based upon introversion, the Western upon extroversion."

"Oh, East is East, and West is West, and never the twain shall meet."

The extrovert goes West and builds new countries while the introvert stays back home.

As is readily seen, the marked extrovert, touching the world of reality at many points, has great difficulty in understanding the introvert, who lives a life more or less away from reality and becomes the dreamer or philosopher of the race.

In order to understand still further these two types of reaction we will consider a

few figures from history. As an example of an extrovert we will take one of the most popular men that America has ever produced, Roosevelt. Roosevelt, when we consider his reaction to his environment, was a typical extrovert. He touched the world at many, many points and always made a desperate effort to dominate his environment. He was a great leader of men, but was never led. He was a hunter and loved to do pioneer work. In this he was an extrovert. As an example in opposition to Roosevelt let us consider President Wilson. Wilson was the typical introvert. He was a deep thinker, at times a dreamer, and produced in his writings a philosophy. He made a desperate effort to dominate his environment but never succeeded as well as Roosevelt.

Again, as an example of the extrovert, we might consider General Sheridan of the Civil War. He was a leader of men, dashing, daring and never planning a retreat. In apposition to him, General Sherman was also a leader of men, a deep introverted thinker who saw far ahead, planned every movement of his armies, both in advancing and retreating. Sherman never went into a battle without considering every possible contingency which could arise. He planned retreating as well as advancing.

Another American who represents a typical normal introversion and whose name is now upon the tongue of the world, Colonel Lindbergh. Lindbergh has the great power of seeing clearly, definitely and far ahead. The power of imagination reaches almost to a point that it equals reality. In the building of his great airship he saw and handled every nut, every bolt and every piece of mechanism which went into its construction. He phantasied his trip across the Atlantic many, many times and upon several occasions, in preparation for that trip, it is reported that he went forty hours without sleeping. He also personified his plane and said "We." Only an introvert could have phantasied this trip as definitely as he did and could have executed the trip itself. The extrovert would have jumped into an airplane and, without preparation, would have landed in the ocean. As examples of extroverts, salesmen may be mentioned. The typical successful real estate salesman, for example, is always an extrovert. He goes down the street with a rattling old Ford, which is about six months ahead of the junk heap, while the introvert, when he travels, his

\*Read before the Southeastern Oklahoma Medical Association, Durant, December 15, 1927.

car is polished and is spic and span. The extrovert makes a fortune out of his salesmanship, but the introvert would starve to death selling gold dollars for ten cents apiece. The extrovert is a plunger. He has ten cents, borrows ninety and does business on the dollar. The introvert handles money very carefully.

Another example of an introvert I wish to mention, Emerson, the great transcendentalist. He represents the true introvert who is more or less a mystic, but who gave to America some of its greatest philosophy. For example, his "Law of Compensation" represents very good philosophy and the essay has been translated into the language of practically every country where civilized people live.

When the extrovert leaves the great wide zone of normality he leads us into the manic-depressive insanity, and when the introvert again leaves the great broad zone of normality he leads us into the precox reaction.

As a religious leader who was an extrovert, showing manic depressive traits, we will mention Mohammed, the great religious leader who came to the Arabs. While in a high phase of his manic-depressive trends, he wrote the Koran, this being one of the greatest examples of a one man Bible, but in our attempt to read this Bible he shows the great character of the manic-depressive by his flight of ideas, which makes the Bible almost unreadable and less understandable to a reader of philosophy. He shows in this Bible more or less of Theomania, that is, he deals a great deal with God, the word God appearing upon practically every page from ten to fifty times.

As an introvert who gave to the world a Bible I will mention Buddha. When we consider the history of Buddha, we see that he is not only an introvert, but in many ways one would classify him as upon the verge of the precox reaction. For example, as was the custom in India, as a child he was married to a little princess, he, himself, being the son of the king. When adulthood was reached a babe was born to the princess, and immediately upon the birth of this child Buddha left his home, put on a beggar's robe and took a beggar's bowl, begging his living from house to house, and spending most of his time out in the wilderness. This he did for seven years, then returned to his native city as a teacher of religion. He never returned to his home or his wife. Yet in spite of this peculiar

conduct he gave to the world one of its greatest religious philosophies.

In his teachings we find such sentences as these:

"Creatures from mind their character drive; mind marshalled are they, mind-made. Mind is the source either of bliss or of corruption.

"By oneself evil is done; by oneself one suffers; by oneself evil is left undone; by oneself one is purified. Purity and impurity belongs to oneself, no one can purify another. Let a man overcome anger by love, let him overcome evil by good; let him overcome the greedy by liberality, the liar by truth!

"Hatred does not cease by hatred at any time; hatred ceases by love.

"Speak the truth, do not yield to anger; give, if thou are asked; by these three steps thou will become divine."

In view of the fact that part of his life was abnormal we are surprised to find such philosophy.

As was said before, when the extrovert develops an insanity he becomes a manic-depressive. In the high phase he has flight of ideas, psychomotor excitement and emotional elation, i.e. he thinks fast, he acts fast and is happy. While in the depressive phase he has difficulty of thinking, psychomotor retardation and emotional depression. In this phase he thinks slowly, he acts slowly and is very depressed. Also in this phase he is always a potential suicide. He is so unhappy and suffers so much that he feels death is the only way out. Yet in this phase, because of his difficulty of thinking and difficulty of acting he finds it very hard to put his thought of suicide into execution.

The mixed manic-depressive presents a far greater problem to understand; because of these three fields of operation, thinking, acting and the emotional content, we may have many different combinations. Here we will discuss only one, and that is where the thinking is increased, the acting is increased and the emotion is depressed.

In this mixed condition the patient must always be considered as more than a potential suicide. He is almost sure to sooner or later accomplish his desire for death, and when recognized he must be put into a hospital and kept under close and careful supervision, because of the great probability that he will accomplish suicide.

When the introverted type becomes pathological he represents that great group that is called dementia precox. In this group the individual draws himself away from reality, living a life of phantasy. His phantasies become more real to him than reality itself. He is seclusive, suspicious, often jealous and filled with

ideas of persecution. His emotions usually become blunted and he presents serious defects of judgment. His conduct may become negative and forces him to do the opposite from which he really wishes to do. He spends the most of his time in autistic thinking or day dreaming, and becomes at times very disturbed if one interferes with his thinking. He frequently becomes the criminal.

There are several special types of dementia precox. They will be mentioned here but not discussed in this paper. There is the catatonic type, which gives the prominence of the negativistic reactions, already mentioned. The hebephrenic type, which shows a vast amount of deterioration. The simple type, showing a small amount of deterioration, and the paranoid type, which frequently becomes homicidal. In recent years the "true paranoiac" has been more or less removed from the dementia precox classification, but will be mentioned here. He shows ideas of reference, delusions of persecution and becomes grandiose in the consideration of his own ego. He always becomes convinced that people "have it in for him" and are planning his death, and because of his delusions of persecution and the fact that there is no dementia in this disease, he nearly always kills. In fact, he is rarely recognized and put into a State Hospital until after he does kill. Many examples of this fact might be given but it seems unnecessary to repeat them here.

In conclusion I wish to say that there is a very broad field of normality in which people live, but that when people develop insanity without organic disease they generally go into one class or the other as above stated. I have purposely omitted smaller groups. The two great groups, manic depressive insanity and dementia precox contain the great majority of people living in the state hospitals.

#### VITAMINE

Experiments made by Herbert M. Evans and George O. Burr, Berkeley, Calif. (Journal A. M. A., May 7, 1927), give positive evidence that wheat germ—the highest and least varying source of vitamin E known—whose curative action at definite quantitative levels has been determined by hundreds of experiments when the substance is fed separately from the diet, can be robbed of its effectiveness when it is fed mixed with high amounts of certain fats such as lard, crisco and oleic acid. It seems likewise clear that these new facts explain in the simplest possible manner the clearly proved complicity of such fats in the accelerated appearance of sterility in dietary regimens in which vitamin E is low or lacking.

#### BOOK REVIEWS

**Crawford W. Long and the Discovery of Ether Anesthesia.** By Frances Long Taylor, with a foreword by Francis R. Packard, M.D., with eight full page plates, cloth, 237 pages, price \$4, 1928, Paul B. Hoeber, Publisher, New York.

Few of the present generation, even of medical men, now recall the controversy waged over the discovery of ether anesthesia. It is now generally conceded that the first physician to use ether for the purpose of producing anesthesia for surgical work was the Georgian, Dr. Crawford W. Long. This volume goes into details, presenting irrefutable facts surrounding the matter of its discovery.

**The Surgical Clinics of North America** (issued serially, one number every other month) Volume 8, Number 1 (Lahey Clinic Number —, February, 1928) 210 pages with 74 illustrations. Per clinic year (February, 1928, to December, 1928). Paper, \$12.00; cloth \$16.00 net. W. B. Saunders Company, Philadelphia and London.

In this issue Dr. Frank H. Lahey discusses among other things, the Management of Post-Thyroidectomy Complications, Excision of the Stoma for Gastrojejunal Ulcer and Gastrojejunal and Jejunal Ulcer; Robert L. Mason, An Illustrative Case of Severe Hyperthyroidism—its management; Louis M. Hurxthal, The Use of Quinidin in Auricular Fibrillation; Howard M. Clute, Enterostomy in Peritonitis and the Technic of Tracheotomy; Lawrence W. Smith and John V. Leach, Melanotic Sarcoma of the Vagina and Status Thymolymphaticus Associated with Hyperthyroidism; Lincoln F. Sise, The Use of Ephedrin in Spinal Anesthesia. The issue contains many other valuable contributions.

**Gynecology For Nurses.** By Harry Sturgeon Crossen, M.D., F.A.C.S., St. Louis, with 365 illustrations, including one color plate; cloth, 281 pages, price \$2.75, 1927. C. V. Mosby Company, St. Louis.

Dr. Crossen is one of the gynecological authorities of the country, an entertaining and instructive writer. After brief survey of pelvic anatomy and physiology in part one, the details of gynecologic nursing are extensively entered into. The work adopts as standard the system used in the authors practice.

**Physical Diagnosis.** By W. D. Rose, M.D., Associate Professor of Medicine, University of Arkansas, Little Rock. Fifth edition, cloth, 310 illustrations and three color plates; price \$10.00, 1927. The C. V. Mosby Company, St. Louis.

In this edition the author stresses further consideration of the pathologic physiology of the heart. Manifestations of incipient cardiac insufficiency have been stressed. Recent advances in the technic of physical examinations have been included.

#### CONVENIENT AXILLARY DRESSING

A convenient axillary dressing has been constructed by Ethan Flagg Butler, Sayre, Pa. (Journal A. M. A., April 20, 1927), by means of the ordinary dress shield used by dressmakers in days gone by.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol. XXI                      APRIL, 1928                      No. 4

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### OUTSTANDING FEATURES OF THE TULSA MEETING

The Tulsa session promises to be unusually rich in high class attractions of every type. Among the notables to be present from outside the State are: Dr. Wm. D. Haggard, Nashville, ex-president, American Medical Association, a citizen, speaker of note and great ability. Dr. Haggard is Professor of Surgery, Vanderbilt; his subject, "Malignant Growths of the Colon and Rectum," (with lantern

illustrations); Dr. Clifton F. McClintic, Detroit, Professor of Anatomy, Histology and Embryology, Detroit College of Medicine and Surgery, his subject, "The Clinical Aspects of the Transportation Mechanism of the Alimentary Tract;" Dr. Benj. F. Turner, Memphis, Professor of Neurology, University of Tennessee, College of Medicine, his subject, "Tired Nerves;" Dr. Richard A. Bolt, Professor of Pediatrics, University of California, Berkley, will appear on the Pediatric-Obstetric Section with "Preventive Obstetrics and Pediatrics;" Dr. Wm. F. Braasch, Mayo Foundation, Rochester, and Dr. John R. Caulk, St. Louis, will appear on the Section of Urology, their subject not yet announced. Dr. Braasch is President Minnesota State Medical Association, and Professor of Urology, University of Minnesota.

Others, whose names not yet submitted, will also appear.

A most interesting and instructive feature of the meeting, if possibly obtainable, will be the presentation of films on "Diagnosis and Treatment of Infections of the Hands," and, if the film is ready for release at the time, the subject of "Obstetrics." The first film has been shown under the auspices of the University of Oklahoma, Extension Department, in a few Oklahoma cities. It met with universal approbation and enthusiasm.

The Tulsa meeting will also offer clinics at the various hospitals, entertainment of the ladies by the auxiliary, golf for all bugs of that calling, a dinner arranged for the Medical Reserve, to which all attending physicians are invited, many social features and very complete scientific programs. Every physician who can should set aside the dates May, 17, 18 and 19.

#### CLINICAL LABORATORY SERVICE

For a number of years members of the medical profession noted and protested against the tendency of commercialization of clinical laboratory work, that it had, or was falling into the hands of lay technicians and becoming the toy of persons with purely the commercial point of view and who had little training for this work, which, throughout, is purely a function of the skilled medical mind, and which must have, at all times, close scientific medical supervision if many pitfalls and dangers are to be avoided.

Committees from organizations of chemists, pathologists and bacteriologists,

and the Council on Medical Education and Hospitals, early in 1924, as a result of continued protest to these various organizations interested, met and adopted certain basic principles which underlie sound laboratory service, and agreed that the work should be conducted by the Council.

Complete lists of laboratories of the country were compiled. Preparation of a schedule of essentials for approved clinical laboratories was compiled and a questionnaire by which the facts could be secured as to each laboratory was also prepared. A very full response was received from laboratories of the country. The findings, including lists of laboratories which seemed to comply with the requirements was published in (Jour. A. M. A., April 3, 1926). The work was approved by the House of Delegates in 1926.

Strong committees were formed in every state or section. These committees composed laboratory experts representing, as equally as possible, the cooperating organizations interested, and hence the interest of the laboratory profession. Investigations are made in each locality by each committeeman, and independently of other committeemen of the same district. Three hundred and fourteen laboratories have reported and one hundred and fifty-one, after careful investigation have been placed upon the approved list and other applications are constantly being received. The Council lends all possible assistance to laboratories whereby they may become eligible for admission to the accepted list. Upon reporting, every laboratory is informed in regard to any deficiencies. The work has been purely constructive, and despite the seeming great difficulties much improvement is already noted. Laboratories formerly run by technicians and only nominally under "medical directors," have come under the ownership and actual control of clinical pathologists of high professional standing and ripe experience. A number of laboratories under control of technicians have gone out of business, and there is an increased demand for pathologists to man the clinical laboratories of the country, the Director of the Mayo Foundation reporting that the salaries offered the pathological graduates of the Foundation are double those offered other graduates of the Foundation, and there is generally reported a more hopeful attitude on the part of clinical pathologists themselves.

It goes without saying that where clinical laboratories upon approved lists are

available, they should be given preference by physicians. There is hardly an excuse for a laboratory offering to undertake the difficult role assumed to remain aloof from investigation and certificate of worthiness by the Council.

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### FILMS OFFERED THE OKLAHOMA PHYSICIANS

The Extension Department of the State University in charge of Paul Vogt, Dean, has presented, through F. W. Beaird, Director of Town and Country Service, one of the most interesting subjects ever enjoyed by our profession, the film on "Diagnosis and Treatment of Infections of the Hand," prepared under direction of the American College of Surgeons, was enthusiastically received by those fortunate enough to attend its presentation before medical societies at Norman, Enid, Oklahoma City, Tulsa, Muskogee, Ardmore and Shawnee. Everywhere unusual interest was evinced and the only regret was that there was not more of similar showings. At a pittance per capita, these films, covering many subject of interest in medicine and surgery will be offered the Oklahoma profession. It is proposed that they be shown in about twenty-five centers of the state, in such manner as to make them available to most all physicians, and at such low cost that it will not be noticed by any physician. If possible some of these films will be shown at the Tulsa meeting, in order that a first hand knowledge of their unusual worth may be attained by men attending that meeting. There is no semblance of advertising or "boosting" any particular system attached to this matter. There is no doubt but what once the film "Diagnosis and Treatment of Infections of the Hand" is seen by our physicians there will be universal desire to see all that it is proposed by the Extension Department as an offering to our profession.

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### Editorial Notes — Personal and General

DR. O. C. KLASS, Muskogee, was reported ill during March and early April.

DR. A. B. LEEDS, Chickasha, attended the meeting of the F.A.C.P. at New Orleans.

DR. S. E. MITCHELL, Muskogee, after a prolonged illness and recuperation at Hot Springs, is back on duty.

DR. C. T. CARAKER, Duncan, returned Sunday from a ten-days' clinical study in Washington, D. C., and New York City.

DR. and MRS. P. C. TAYLOR, Chelsea, attended the recent meeting of the American College of Physicians at New Orleans, and during the closing exercises the doctor was received in Fellowship in the College.

DR. W. H. LIVERMORE, Chickasha, has returned from attending the clinics at New Orleans. The trip was extended to include a pleasure outing to the Caribbean Islands.

DR. EUGENE RICE and Miss Mary Louise Alexander, both of Shawnee, were married at the home of the bride February 11th. They have just returned from a honeymoon spent at points on the Gulf Coast.

DR. E. E. CONNOR has recently moved to Erick, having bought a half interest in the New Erick Hospital, and becoming associated with Dr. G. H. Stagner who is chief surgeon and founder of the hospital.

TULSA COUNTY MEDICAL SOCIETY met at the New Morningside Hospital February 27th. Papers were read by Drs. D. M. MacDonald, James Rogers, D. O. Smith and W. J. Trainor. Luncheon was served by the physicians' wives.

DR. MORRIS LHEVINE, Tulsa, has been appointed counselor in Oklahoma for the Radiological Society of North America, according to an announcement made by E. C. Ernst of St. Louis, president-elect of the association.

MAYES COUNTY MEDICAL SOCIETY had an interesting meeting March 7th at the office of the secretary, Dr. Ivadell Rogers. After reading of the minutes of the previous meeting a history of cases was presented by Drs. Hillis and Rogers.

MORE THAN THIRTY-FIVE PHYSICIANS of Choctaw, Pushmataha and McCurtain counties were present at the Tri-County Medical County Society at Valliant, March 31st. Several prominent doctors of Oklahoma addressed the physicians of that district.

COMANCHE COUNTY MEDICAL SOCIETY held their semi-monthly meeting March 27th at the Doctors' and Dentists' building. The subject for discussion was "Blood Pressure and its Significance," presented by Drs. Barber, Knee and Meade of Lawton.

DR. LUCILE SPIRE BLACHLY of the State Health Department left March 29th to attend the Second Annual Public Health Conference at Chicago at the A.M.A. headquarters March 30-31, enroute on her way to Washington for the Fifth Annual Conference of State Directors of Bureaus of Child Hygiene April 2-4.

LeFLORE COUNTY MEDICAL SOCIETY met March 8th. A very interesting paper was read on "Methods of Early Diagnosis of Tuberculosis," by Dr. Wm. E. VanCleave of the Indian Tuberculosis Sanatorium, Tahihina, discussed by Dr. J. B. Wear and the society.

THE RADIOLOGIC SOCIETY of North America will hold its 14th annual convention in Chicago, December 3-7. The Drake Hotel, Lake Shore Drive and North Michigan Avenue has been selected as headquarters. Reservations should be made through Dr. T. J. Ronayne, West Suburban Hospital, Chicago, or direct through the Drake Hotel.

GARFIELD COUNTY MEDICAL SOCIETY held its monthly meeting March 22nd, at the Oklahoma Institute for Feeble Minded. Dr. Griffin, superintendent of the state hospital at Norman, and members of his staff, presented a medical program following the dinner. Dr. S. N. Mayberry, president of the County association, presided at the meeting.

McCURTAIN COUNTY MEDICAL SOCIETY met in Idabel February 28th, at the office of the County Health Unit, with Dr. R. D. Williams, president; Dr. R. H. Sherrill, Broken Bow, secretary, with the majority of the physicians of the county present. The Society will meet again in April at the same place. Dr. Barker of Broken Bow will read a paper on "Diarrhea of Children."

POTTAWATOMIE COUNTY MEDICAL SOCIETY held its regular annual meeting in their club rooms January 12th, and elected the following officers: Drs. H. G. Campbell, president; Eugene Rice, R. C. Kaylor and T. C. Sanders, vice-presidents, respectively, and W. M. Gallaher, secretary and treasurer. The annual address was given by Dr. Leo Riley, Oklahoma City. His subject was "History of Medicine." A large number of visitors attended, among them being Dr. J. S. Fulton, Atoka, and Dr. Ellis Lamb, Clinton.

KANSAS CITY SOUTHWEST CLINICAL SOCIETY—In this issue appears the preliminary announcement of the annual Fall conference to be held in Kansas City, Mo., October 9-11. It is expected that the coming meeting will be more widely attended than any of the former successful meetings. A departure of interest to the profession of the Southwest is that the program for this meeting will consist mainly of symposia and clinical programs arranged especially for the general practitioner. All special subjects will be correlated with this idea in mind. In fact the entire program will approximate a practical post-graduate course in these problems of every day interest.

THE GRADY COUNTY MEDICAL SOCIETY met with the Stephens County Society March 27th at Duncan. The Grady County Society put on the program and the Stephens County Society furnished the luncheon. The program consisted of a case report of chronic constipation, by Dr. A. B. Leeds, Chickasha. An interesting lecture on some heart diseases, setting forth early symptoms of approaching heart disease, by Dr. A. B. Chase, Oklahoma City. Dr. Roy Emanuel, Chickasha, read an excellent paper entitled, "Internal Injuries of the Head." Dr. H. Coulter Todd, Oklahoma City, who was present, but not on the regular program, in response to

numerous requests for a talk, told us how to blow our nose as not to force infection into the antrums. Dr. Rebecca Mason, physician for O. C. W., Chickasha, told of her work in connection with the school. Dr. W. H. Livermore, Chickasha, made a good-fellowship talk.

THE OKLAHOMA COUNTY MEDICAL SOCIETY reported a record attendance at its regular meeting March 24th at the Medical Arts building at which time the Extension Department of the State University showed the first release of a three-reel motion picture on "Infections of the Hand." This set of films will be shown to three or four groups over the state for the purpose of ascertaining if the profession would be interested in having the State University secure the full medical film library covering fifty-five different subjects. The total cost of the whole library, the Extension men advised, was \$8,000.00 and the films on standard stock should last fully five years. Each society desiring the film could make use of the film as often and as long as desired. Each would be shown by a skilled operator furnished by the Extension Department. Should the physicians of the state desire the library the plan proposed was that they share the original cost of the library with the Extension Department. Among other films ready for use are Nursing, Technique, Hernia, Goitre, etc. Each physician viewing the film was asked to express his opinion of them to the Extension Department. One paper was read, "The Treatment of Pneumonia in Childhood and Infancy," by Dr. Clark Hall. Discussion was opened by Dr. Wm. Taylor.

LINCOLN COUNTY MEDICAL SOCIETY met at Chandler March 7th, and had a turkey dinner. After dinner was served Dr. Moorman, Oklahoma City, gave a practical demonstration of examining a clinical case, presented by Dr. A. M. Marshall, outlining the method and noting the findings in the case. Dr. McNiel was introduced, and by the aid of radiographs, talked on Differential Diagnoses in Pulmonary T. B. as compared to cases of other origin, simulating Pulmonary T. B., giving many valuable points and showing that in practically all cases it was necessary to make a picture to learn the correct findings. Dr. Antonio Young, Oklahoma City, discussed the Meningeal type of T. B., showing that in many cases children from two to four years old, who had been associated with a parent who has Pulmonary T. B., often developed tubercular meningitis, which develops very slowly and is hardly distinguishable from fever of low type until the fatal symptoms appear, and for which there is no known relief. Preventative treatment is the only hope, and it is wisdom to take the parent away from the children entirely. These cases often develop before the parent is known to have tuberculous infection, and it is discovered in the parent after the death of the child. He urges close observation in our examination, to obtain these facts, if present, and endeavor to convince the parent of the necessity of isolation from their children. Dr. Moorman then took up the subject of relief to advanced cases and by X-ray pictures, showing the results of pneumothorax in cases where there were no adhesion of the pleura and radical rib resection where pneumothorax could not be instituted, showing 35 per cent of cures and an additional

25 per cent greatly improved, the other 40 per cent were helped, but in this class is included those parents who will not conform to the treatment. This class of cases are in the advanced type and have had rest and sanatorium observation without results. Dr. Horace Reed, Oklahoma City, discussed the modus operandi of thoracoplasty, and that it is generally done in a two-stage operation, under local anesthesia, with the aid of gas in nervous patients.

#### DOCTOR JAMES R. CALLAWAY

Dr. James R. Callaway, pioneer physician, passed away at his late residence in Pauls Valley, March 10, 1928, after a brief illness. He was 73 years, 6 months and 18 days of age.

Dr. Callaway was born in Denton County, Texas, August 22, 1854. His preliminary education was obtained in common schools. He graduated from the Medical Department of Fort Worth University in April, 1897. He received his license to practice medicine in Oklahoma, in July, 1904.

Dr. Callaway is survived by his wife and five children. Funeral services were conducted by the Rev. R. A. Brigham of the First Christian church. Burial was made in Mount Olivet cemetery.

#### DOCTOR THOMAS H. HENDERSON

Dr. Thomas H. Henderson, 57 years of age, died in a Paris, Texas, sanitarium February 25, 1928. Dr. Henderson was a well known physician of Ft. Towson, having come here about eighteen years ago—living for a time in Hugo. About a year or so ago the doctor's health began to fail—dropsy and heart failure are said to have been his ailments. At times he would be better, but would soon grow worse again.

Dr. Henderson had never married and had no brother or sister living. A nephew came from Memphis to accompany the body home for interment.

#### DOCTOR R. H. GRASSHAM

Dr. R. H. Grassham was born in Kentucky April 28, 1868. His preliminary education was obtained in common schools. He was graduated from the Miami Medical College March 20, 1890, receiving his certificate to practice medicine March, 1908. Dr. Grassham was 60 years old at the time of his death, and had been a resident of Bryan county for 25 years.

Dr. Grassham is survived by a brother and two sisters. Funeral services were held March 27, conducted by Rev. R. A. Schell, pastor of the Christian church of Durant.

## DOCTOR S. AUGUSTUS RICE

Dr. S. A. Rice, medical practitioner of Velma, passed away at his home February 23, 1928, advanced age causing his passing. Funeral services were conducted by Rev. Davis of the Christian church, and interment was in the Alma cemetery.

Dr. Rice was born in Arkansas October 8, 1856. He had been in active medical practice since 1890. Coming to Texas at an early day he practiced at Lebanon, Justin and Salina. Since 1898 he had been a resident of Indian Territory and the State of Oklahoma. Dr. Rice had been a resident of Stephens county for the past 12 years. He first came to Alma, and removed to Duncan in 1923.

The deceased is survived by his wife and one son.

## DOCTOR A. T. DOBSON

Dr. A. T. Dobson, pioneer physician and surgeon, died at his home in Hobart March 27, of heart disease.

Dr. Dobson was born July 7, 1868, at Cape May, New Jersey. His early life was spent there, later moving with his parents to Philadelphia, Pa. While here he attended LaFayette College, where he began the study of medicine. Later he entered the University of Pennsylvania, completing his course in 1885. Dr. Dobson moved to Oklahoma at the opening of this country. In 1917, he moved to Rocky, practicing there nine months, and then coming to Hobart where he had remained since.

The deceased was a member of the Shrine and Knights Templar, and was past high priest of the Royal Arch Masons.

Dr. Dobson is survived by his widow and two children. Funeral services were held from the St. James Episcopal church, under auspices of the Masonic organization.

## DOCTOR J. M. BOLGER

Dr. J. M. Bolger, 74 years old, a practicing physician for 42 years, and a resident of Poteau for more than 15 years, died at his home in Poteau February 23, 1928, following a brief illness. Dr. Bolger was born in Atlanta, Georgia, May 17, 1854. He was reared and educated in Columbia County Arkansas. He graduated from the Louisville Medical College, Louisville, Kentucky, February 25, 1886. He was an Honorary member of the LeFlore County Medical Society. Dr. Bolger was a quiet, unassuming character and made many friends, both personal and professional, during his 15 years in Poteau. Dr. Bolger is survived by his wife, Mrs. Kate Bolger, three sons and three daughters. Burial was made in the Oakland Cemetery, Poteau, Oklahoma.

## UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.  
1010 Medical Arts Building, Oklahoma City.

Many a urologic case should first be studied by a neurologist.

Keep a jealous eye of suspicion on the sterility of your lubricants.

It is not how many glasses you use, but how much judgment you use.

The bismuth or X-ray catheter is the type best adapted for an indwelling ureteral catheter.

Silver nitrate solutions develop nitric acid on aging; keep them fresh by making only small quantities at a time.

A configurate infiltration persisting for weeks without breaking down is not syphilitic in origin; think of erythema perstans.

For draining the pelvis of the kidney by means of an indwelling catheter, use a catheter so large as to cause a slight initial discomfort.

There is no such animal as a urologist without a cystoscope; and there should be no such thing as a urologist without a proctoscope.

Metallic bismuth suspension does not remain sterile. Before using any of it for intramuscular injection the vial should be heated in the sterilizer for ten minutes, or else one runs the risk of abscess formation.

If you are not today able to use one reasonably serviceable and dependable drug that was unknown to you a year ago, it is suggestive at least that you are not keeping up with medical progress as well as you might.

The following extracts from the American Medical Journal are interesting to all urologists and sometimes are overlooked.

**Congenital Syphilis and Tests of Hepatic Function**—In thirteen children, aged from 1½ to 13 months, with congenital syphilis, Salomon and Schoenthal noted the blood bilirubin curve before and after energetic treatment with nearsphenamine, for the purpose of determining liver function. They failed to note any rise. This was taken to mean that liver function was normal; hence the treatment is justified.

**Wassermann Reaction in Pregnant Women**—Dodds reports the results of the Wassermann reaction obtained in 2,000 consecutive pregnant women. A report other than negative was obtained in 130. Attention is drawn again to the frequent absence of a history or of clinical manifestations of syphilis in the pregnant woman; to the high percentage of stillbirths and deaths under one year of age from syphilis, and to the preventable character of this condition. It is shown that the first evidence of syphilis, and in some cases the only evidence, was a positive Wassermann reaction.

**New Clinical Urinary Indicator**—Markwalder recommends a mixture of methyl red and methyl blue (equal parts of each in a 0.5:1,000 alcoholic

solution) for testing the reaction of urine. In the presence of acid this solution turns blue; in the presence of alkali green. In a dark bottle, it keeps well. It is adapted to quantitative examination.

—O—

**Determination of Urinary Acidity**—Criticism of Neubauer's indicator on theoretic grounds are answered. It remains, however, in Strauss' opinion, an inconvenient method, and he suggests, instead, the use of methyl red, which gives a red color to a highly acid urine.

—O—

**Malaria Therapy of Gonorrhoea**—Scherber (Wiener. Med. Woch., No. 44, for 1927) states that for some time, in connection with malaria and malaria in other diseases, it has been found that the febrile process of malaria is capable of exciting a favorable influence on gonorrhoea. The literature of the subject gives conflicting reports according to the greater or less enthusiasm of the relators.

The author's experience has been based on fifteen male cases and twenty eight female cases treated by injections of malarial material supplied in each instance from the medical clinic of the Rudolfshospital in Vienna. The majority of the cases developed the tertian type, with six to twelve chills. An analysis of the results enabled the author to say that the malaria therapy did not effect an influence on the gonorrhoeal discharge in every instance, nor did it affect a resorptive reaction on the infiltrations. There was no apparent direct action on the gonococci. However, on account of the small number of cases in the series the author felt there was a need for repeating the study before expressing any definite judgment on the effect of malarial pyrexia on gonorrhoea.

—O—

**Anti-Chancroid Vaccine in Paresis**—Sicard, Hagueneu and Wallich (Presse Medicale, September 14, 1927) working with intravenous injections of the anti-chancroid vaccine of Nicolle provoked an attack of fever after every injection. The vaccine produced no sensitization. The dose is determined by giving progressively increasing amounts. Anti-syphilitic therapy was also given at the same time. The neuropathic, psychic and general condition of the two patients was notably improved after the tenth injection, but the spinal fluid Wassermann remained positive. The authors believe that it is true that malarial parasites exert no specific action on the treponemata, that the anti-chancroid vaccine of Nicolle is to be preferred to the malaria treatment.

Since the febrile process seems to be the thing that causes the specific or non-specific protein dissemination it occurs to the reviewer to wonder why use a malarial plasmodia or other organisms in infecting an individual when the pyrexia can be obtained with any number of other things which can be as readily controlled and just as much elevation of temperature obtained.

### EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.  
726 Mayo Bldg., Tulsa

**Malignant Tumors of the Antrum of Highmore: End-Results of Treatments.** New, G. B.: Arch. Otolaryngol., 1926, iv, 201.

The combination of cautery and radium, as employed since 1917 in the Mayo Clinic for the

treatment of malignant tumours of the antrum of Highmore, has eliminated the operative deaths usually occurring in this disease and has resulted in a higher percentage of cures than previous operative measures.

During the eight-year period from 1917 to 1924, inclusive, 168 patients with malignant tumors of the antrum were examined. One hundred and twenty-nine had primary tumors of the antrum and thirty-nine had tumors of the antrum secondary to tumors of the upper jaw. This division is not absolute as it is sometimes difficult to determine the origin of the tumor.

In the selection of patients for treatment, the usual factors were considered, namely, the age of the patient, the extent of the tumor, the previous treatment, and the duration of the disease. Ninety-seven of the patients (seventy with primary tumors and twenty-seven with secondary tumors) were treated by cautery and radium. More extensive tumors can be treated by this method than by surgery alone.

Diathermy has almost entirely replaced the use of soldering irons because it requires no protection for the surrounding tissues and may be employed with greater facility.

The end-results of the treatment of malignant tumors of the antrum with the cautery and radium have confirmed the conclusions made in a report published in 1920. There were no operative deaths among the ninety-seven patients treated. Of the seventy patients with primary tumors, nine lost the eye on the involved side. Of the twenty-seven patients with secondary tumors, two lost an eye. Of the seventy patients with primary malignant tumors of the antrum, twenty-one (30 per cent) were living from a year and a quarter to eight years after the treatment. Of the twenty-seven patients with secondary malignant tumors of the antrum, fourteen (51.8 per cent) were living from a year and a quarter to eight years later. Of the ninety-seven patients with primary and secondary malignant tumors of the antrum, thirty-five (36 per cent) were living from a year and a quarter to eight years later.

—O—

**Some Reflections on the Maxillary Sinus.** Skillern, R. H.: Ann. Otol., Rhinol & Laryngol., 1926, xxxv, 717.

In this article Skillern presents his objections to the generally accepted theory regarding the cause of death following needle puncture of the maxillary sinus and the reliability of the returning lavage fluid as a criterion of the pathological condition present.

Death following needle puncture of the maxillary sinus is almost universally attributed to cerebral air embolism, but Skillern believes the cause is shock due possibly to disturbance of the vagus by irritation of the second branch of the trigeminal nerve. In support of his conclusion he cites the fact that at autopsy no evidence of embolism has been found. In accordance with his theory he recommends that when resistance is offered to the needle, a thorough investigation be made and a large opening formed into the antrum to allow the free escape of injected fluid.

With regard to the appearance of the returning fluid as a criterion of the pathological condition of the sinus mucosa it is practically always conceded that if the sinus washing return clear, no disease is present. Skillern states, however, that he has found maxillary sinus infection in a co-

siderable number of cases in which the returned lavage fluid was negative. Moreover, he has noted that when a black rubber pus basin is used the return fluid is of a light straw color, whereas when a white basin is used the fluid is clear and transparent.

—o—

**Radium in Polypoid Ethmoiditis: Report of Cases.**  
McCullagh, S., and Robinson, G. A.: *Arch. Otolaryngol.*, 1926, iv, 215.

Among the diseases most resistant to treatment which are encountered by the rhinologist is hyperplastic ethmoiditis with polypoid change. In this condition the authors perform a radical operation and then apply 50 mgm. of radium for one hour or 100 mgm. for two hours. If necessary, the irradiation is repeated after from ten to fourteen days.

By this treatment the amount of polypoid tissue is decreased, the interval before the recurrence of polypi is lengthened, and associated conditions such as asthma are relieved.

While the end-results are not yet known, radium is the most effective agent so far found for the control of the disease.

The article contains sixteen case reports.

—o—

**Otosclerosis: Drury, D. W.: Ann. Otol., Rhinol. & Laryngol., 1926, xxxv, 651.**

The author believes that otosclerosis can be excited in a person predisposed to it by many and widely divergent factors, the essential cause being possibly a clinical one affecting the nutritive stability of developing and fully developed bone and cartilage. In a certain percentage of cases the several endocrine glands are responsible through their influence or normal metabolism. In the presence of an endocrine or non-endocrine pathological condition, a constitutional tendency or hereditary influence is also a factor. Drury believes that the endocrine influence is an indirect and non-specific one, but that in cases without firm ankylosis of the footplate of the stapes or other irreversible organic change, a response to proper glandular treatment may be expected with reasonable confidence.

—o—

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
717 North Robinson St., Oklahoma City

**Kidner, F. C., and Muro, F.: Comparative Results of Operative and Non-Operative Methods of Treatment of Tuberculosis of the Spine in Children. J. Bone and Joint Surg., 1927, ix, 649.**

Under condition as nearly ideal as possible, fourteen children under ten years of age, with tuberculosis of the dorsal or lumbar vertebrae, were chosen for a prolonged comparative test of the operative and non-operative methods of treatment. So far as possible, they were divided into pairs according to their age, the stage of the disease, and their general physical condition. From each pair, one child was selected for operation and one for prolonged frame treatment. In the surgically treated cases, the Higgs type of fusion was done. In both groups of cases the same physical and X-ray examinations were made and the same after-treatment was given. From time to time the children who were clinically free from symptoms, whether operated upon or not, were allowed to get up wearing a back brace, in order to test the solidity of the healing. Such tests always led to a recurrence of symptoms in a

shorter or longer period unless the roentgenograms showed a continuous firm bony bridge uniting the diseased vertebrae and disappearance of all signs of rarefaction between them.

Thirteen of the children are well and physically active. Eleven have small unimportant kyphoses. The only abscess that developed was present when the child was first seen.

One child who was operated upon has a marked kyphos due to failure of complete fusion of the laminae which necessitated a second operation. All the children except these two have flexible useful spines, but the authors believe that the flexibility is greater in those who were not operated upon.

The following conclusions are drawn:

1. The cure of tuberculosis of the spine depends principally on long-continued rest without weight bearing.
2. Cases in which fusion operation have been done requires practically as long and careful after-treatment as those without operation.
3. When cured, patients not operated upon have more flexible spines than those treated surgically.
4. The possible shortening of convalescence does not justify the risk incident to operation.

The authors' cases will be kept under observation and a final report regarding them will be made later.

—o—

**Jefferson, G.: Fracture of the First Cervical Vertebrae. Brit. M. J., 1927, ii, 153.**

The author reports three cases of fracture of the posterior arch of the atlas, in one of which the odontoid process was broken in addition. He reviews also 62 cases reported in the literature, and in a table gives the nature of the accident, the clinical signs of cord or nerve injury, the anatomical diagnosis, and the results.

The chief symptoms of fracture of the first cervical vertebrae are pain and rigidity of the neck.

With regard to the mechanism of the fracture, the author reminds us that the lateral masses of the atlas are triangular with their wide base outward and that the upper and lower articular facets correspond. Therefore, when force is applied directly downward from the top of the head, a tension fracture may occur and the atlas ring gives away.

The treatment of fracture of the first cervical vertebra is immobilization in plaster of Paris.

—o—

**Boorstein, S. W.: Osteochondritis of the Spine: With A Report of Two Cases: J. Bone and Joint Surg., 1927, ix, 629.**

Vertebral epiphysitis is characterized by deformity of the spine in the form of a knuckle to a generalized kyphosis or scoliosis with little or no pain.

The roentgenograms usually show that only one vertebra is affected. This vertebra assumes a cuneiform shape. There is no involvement of the disks above or below it. The cartilage is usually thicker.

The etiology of the condition, as in Legg-Calves' disease and Osgood-Schlatter's diseases is unknown.

In the treatment, immobilization in a plaster of Paris jacket or brace is indicated. The source of the infection should be sought. In order that the

clinical syndrome of osteochondritis of the spine may be definitely established, every case of spinal deformity suggesting the condition should be studied.

The authors report two cases in detail.

### TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
912 Medical Arts Bldg., Oklahoma City

**A Statistical Study of the Relationship Between Pregnancy and Tuberculosis.**—Alice M. Hill, Amer. Review Tuberculosis, Feb., 1928.

This study includes 349 women whose pregnancies occurred during or immediately preceding pulmonary tuberculosis and 160 women who had never been pregnant or whose pregnancies were in no sense associated with tuberculosis, and who serve as a control group.

The earlier the 349 mothers of the study were diagnosed with respect to their pregnancy, the less hazardous the latter was for them. Less than one in 12 of the women diagnosed before gestation was dead a year after its termination; one in five of the diagnosed during pregnancy was dead, and one in three of those diagnosed after delivery.

The highest mortality among the tuberculous women was suffered by those pregnant for the first time, the danger of primiparity among the tuberculous being similar to that among the mothers in general.

In the belief that a better picture of a relation between pregnancy and tuberculosis might be obtained if histories were to be taken with both these conditions in mind concurrently with the progress of the case, a new plan of research has been evolved in which it is hoped a considerable number of physicians will cooperate. The scheme is for each physician interested to fill out, as fully as possible, a uniform record form for every tuberculous married woman coming under his care, entering on the form as time goes on any change in her condition, and when the case has been closed for the physician to send the complete record to the National Tuberculosis Association.

**Innate Resistance to Tuberculosis.**—Chas. T. Ryder, Amer. Review of Tuberculosis, Feb., 1928.

The author emphasizes innate immunity apart from hygienic conditions, the most practically important advantageous factor now known to us in our conflict with tuberculosis.

In the case of endemic diseases or "universal viruses," to which practically all persons are exposed, first infection usually takes place in the first years of life. The majority combat these first infections successfully because of their innate resistance. A minority, whose resistance is naturally low, or is not yet fully developed, or is overwhelmed, succumb and are eliminated, accounting for the high death rate in the first years of life from all these diseases. Between early childhood and adolescence, the death rate from all diseases is remarkably low, though to the best of our knowledge most first infections with endemic diseases occur in this period.

A race long exposed to a disease has a much higher innate resistance to it than a race newly exposed.

In tuberculosis first infection in childhood is usually very well resisted. It produces no illness as a rule and is attended by a very low death rate. This resistance on first encounter with the tubercle bacillus must be an inherited trait. After this period the death rate rises rapidly and maintains a high level throughout the rest of life.

**Concerning the Tuberculous Nature of Pleurisy From the Life Insurance Standpoint.**—H. B. Anderson, Amer. Review of Tuberculosis, Feb., 1928.

With the exception of pleurisy the direct result of trauma, the weight of authority is strongly in favor of regarding all pleurisies as secondary. Pleurisy following exposure and chill is now generally regarded as secondary to another infection, usually tuberculosis.

Graves in 1842 stated that "it is a law of pathology that if a pleurisy appears on one side of the chest and sometimes afterward shows itself in the other, it in all likelihood is dependent upon the tubercles. In 1886 Kelach and Vaillard, in an analysis of 113 cases of acute pleurisy, found 82 per cent to be tuberculous and they concluded that "ordinary pleurisy is only a manifestation of local tuberculosis."

Bray believes "that for insurance purposes all idiopathic pleurisies should be considered as tuberculous."

Clinical experience, as well as statistical data, bear out the attitude of insurance companies that the danger period in ordinary pleurisy is in the years immediately following the attack, and during this period, at least for the first year or two, the lives are either uninsurable, or accepted only after rigid selection and with provision for a high mortality experience.

In the favorable cases there is gradually decreasing risk, so that after five years, those, and especially with applicants over 30 years of age, whose general condition, family history, build, weight, habits and occupation are satisfactory, are accepted at standard rates. However, it should always be borne in mind, especially in applicants with a family history of tuberculosis, with poorly formed chests and if the underweight is greater than before the attack, if the tendency is further decreased, or if the weight falls below the family tendency, that the failure to regain or increase in weight may be due to the persistence of a clinically latent, but by no means negligible systemic tuberculosis.

One cannot combat too strongly a tendency to overlook the significance of an attack of dry pleurisy because it is of brief duration. It is the nature of the underlying cause, not the length of the attack, which is most significant, and one has frequently seen a case lasting only two or three days, not confining the patient to bed, the precursor of pulmonary tuberculosis.

**Electrocardiographic Studies in Pulmonary Tuberculosis.**—Saling Simon and Felix Baum, Amer. Review of Tuberculosis, Feb., 1928.

These experiments showed the average value in height of the "T" wave to be lower than that given by Lewis in his chart of 52 normal individuals, which would indicate that there exists in tuberculous individuals a weakened heart muscle.

Collapse treatment does not always influence the electrocardiographic picture.

## FOR THE TREATMENT OF PNEUMONIA

The vaccine treatment of pneumonia has not given very satisfactory results. With the purpose of obviating the chief difficulty in the vaccine therapy of this disease, namely tardiness of action, Parke, Davis & Co. have brought out a new antigen, one that represents the vaccine principle but acts much more rapidly. It is called Pneumococcus Immunogen.

Vaccines are killed bacteria. Pneumococcus Immunogen is obtained from cultures of the three specific types of pneumococcus, but there are no bacteria, dead or alive, in it. It seems, from the researches conducted and published by Parke, Davis & Co., that the antigenic principle of bacteria is not so much IN the bacteria as ON them; it can be washed off. Pneumococcus Immunogen consists of the washings of pneumococci, tested serologically to demonstrate its superiority to a corresponding bacterial vaccine.

The Immunogen is administered, as a rule, intramuscularly, though it can be given intravenously in smaller doses; and the injections may be repeated at intervals of four or five hours.

Literature on Pneumococcus Immunogen is offered to physicians by Parke, Davis & Co.

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Jefferson .....	J. I. Taylor, Ringling.	W. J. Dorsey, Ringling.
Kay .....	W. M. Leslie, Blackwell.	L. G. Neal, Ponca City.
Kingfisher .....		
Kiowa .....	J. A. Land, Hobart.	J. H. Moore, Hobart.
Latimer .....	J. M. Harris, Wilburton.	E. B. Hamilton, Wilburton.
LeFlore .....	E. N. Fair, Heavener.	J. B. Wear, Poteau.
Lincoln .....	W. E. Nickell, Davenport.	J. M. Hancock, Chandler.
Logan .....		
Marshall .....	T. A. Blaylock, Madill.	W. D. Haynie, Kingston.
Mayes .....		Sylba Adams, Pryor.
McClain .....	I. N. Kolb, Blanchard.	O. O. Dawson, Wayne.
McCurtain .....		R. H. Sherrill, Broken Bow.
McIntosh .....	G. W. West, Eufaula.	W. A. Tolleson, Eufaula.
Murray .....	W. H. Mytinger, Sulphur.	H. C. Bailey, Sulphur.
Muskogee .....	L. B. Oldham, Sr., Muskogee.	A. L. Stocks, Muskogee.
Nowata .....	Fred R. Dolson, Nowata.	John R. Collins, Nowata.
Okfuskee .....	H. Wesley Yeats, Okemah.	C. M. Bloss, Okemah.
Oklahoma .....	A. B. Chase, Oklahoma City.	R. L. Murdoch.
Okmulgee .....	G. Y. McKinney, Henryetta.	M. B. Glismann, Okmulgee.
Osage .....	E. C. Keyes, Shidler.	M. E. Rust, Pawhuska.
Ottawa .....	Burleigh E. Detar, Miami.	J. W. Craig, Miami.
Pawnee .....		E. T. Robinson, Cleveland.
Payne .....	L. A. Cleverdon, Stillwater.	L. A. Mitchell, Stillwater.
Pittsburg .....	Chas. M. Pearce, McAlester.	F. L. Watson, McAlester.
Pontotoc .....	M. M. Webster, Ada.	C. F. Needham, Ada.
Pottawatomie .....		M. M. Gallahe, Shawnee.
Pushmataha .....	H. C. Johnson, Antlers.	J. A. Burnett, Dunbar.
Rogers .....	K. D. Jennings, Chelsea.	W. A. Howard, Chelsea.
Seminole .....	A. A. Walker, Wewoka.	J. D. McGovern, Wewoka.
Stephens .....	A. J. Weedn, Duncan.	J. W. Nieweg, Duncan.
Texas .....		R. B. Hayes, Guymon.
Tillman .....	R. L. Fisher, Frederick.	C. Curtis Allen, Frederick.
Tulsa .....	W. J. Trainor, Tulsa.	Ralph McGill, Tulsa.
Wagoner .....	S. R. Bates, Wagoner.	John D. Leonard, Wagoner.
Washington .....	H. C. Weber, Bartlesville.	J. V. Athey, Bartlesville.
Washita .....	B. W. Baker, Cordell.	A. H. Bumpardt, Cordell.
Woods .....	Howard B. Ames, Alva.	O. E. Templin, Alva.
Woodward .....	H. Walker, Rosston.	C. E. Williams, Woodward.

NOTE—Corrections and additions to the above list will be cheerfully accepted.

## *The Selection of a Physician—*

The selection of a physician for an operation or as a family doctor, is usually made with some care. We consult those who have employed physicians and are governed largely by their recommendations. But having selected a physician, we follow his advice. We trust him even to the extent of submitting to operations that may have serious results.

The point is, we trust THE MAN WHO KNOWS.

Now, doctor, the institutions and the firms advertised in this Journal were carefully investigated before their announcements were printed here. The medical products were submitted to laboratory tests, before they were accepted by the Council on Pharmacy and Chemistry.

On the same principle that patients trust you about matters with which you are informed, so your publishers urge you to trust their judgment and buy goods from the advertisers who are admitted to these pages. Other considerations being equal, you should give your advertiser PREFERENCE because you know they are believed to be trustworthy. Don't speculate or experiment! Trust the APPROVED firms and goods!

# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLA., MAY, 1928

NUMBER 5

## SUMMER DIARRHEAS IN CHILDREN

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The mortality from the diarrheal diseases or so-called "summer complaint" has always been cause for a great deal of concern. Due to improved feeding methods, better living conditions, closer supervision of milk supply, etc., there has been a remarkable reduction in this death rate in recent years. Still, this group of conditions ranks among the foremost factors in infant mortality. They are essentially hot weather diseases—only occasionally are cases seen during the cool months of the year. And these usually complicate infections elsewhere in the body—sinusitis, mastoiditis, etc. Practically all the severe cases occur during the first two years of life. They are much more common among the poor in the overcrowded sections of the cities and in the rural districts. Artificial feeding during the first year or dietary indiscretions during the second year constitute the greatest etiological factors—other than summer heat.

In this paper an attempt is made to review some of the most important points in the handling of these cases without being too scientific. It represents what the writer believes to be a common sense and practical classification and treatment.

The diarrheal diseases have not, in the past, been satisfactorily and uniformly classified. Hardly any two authorities have coincided. Possibly the most logical classification is that of Porter and Carter. They divide them into:

1. Mechanical diarrheas.
2. Proteolytic diarrheas.
3. Fermentative diarrheas.
4. Infectious diarrheas.

The first two classes will be passed over as they belong more properly with the general subject of infant feeding. Most all of our summer cases can be classified as either fermentative or infectious diarrheas.

Before beginning any form of treatment, one should determine, if possible, which type of diarrhea is present. The main points of differentiation are:

1. Fermentative diarrhea is simply a fermentation of the intestinal contents without any attack upon the intestinal mucosa or other body tissues by the causative organisms. Infectious diarrhea is a definite bacterial invasion of the intestinal walls and other body tissues—usually by some strain of the bacillus dysenteriae.

2. In fermentative diarrhea the temperature is apt to be higher with a decline at the end of four or five days. In the infectious type the temperature is not often high, except in the very beginning, but runs a prolonged course over a period of several days or weeks. Some of the mild cases have practically no fever.

3. In the fermentative type the abdomen is commonly distended, but there is little pain or tenesmus present. The infectious type presents a flat or sunken abdomen and usually pain with tenderness—especially over the colon.

4. The character of the stools is different. The fermentative type usually produces a green, watery, irritating stool, acid to litmus and showing fermentation. The infectious type of stool is characterized by the presence of pus and blood, very little odor and usually an alkaline reaction.

Two points here should be emphasized: the presence of blood and the alkaline reaction. These are generally quite sufficient to establish the diagnosis of infectious diarrhea.

Now it may not be possible to properly classify every case. For instance, the real severe cases of fermentative diarrhea due to the intense irritation of the intestinal mucosa, may show some blood in the stools. And at times the infectious type will show some fermentation. It is possible for both types to be present at the same time. The character and reaction of the stools also depends some upon the kind of food ingested. But generally speaking,

the classification given above will be found practical.

Before taking up the treatment proper, one should at least mention prophylaxis. Naming the predominating etiological factors should at once suggest the most important measures of control: Encouraging breast feeding, properly supervising artificial feeding, advocating the boiling of all milk given during the first two years of life and educating against gross dietary indiscretions. The present wide use of lactic acid milk as an infant food in some sections doubtless is very instrumental in lessening the frequency of these disturbances.

The active treatment can be discussed under the following headings:

1. Initial purgation.
2. Period of starvation.
3. Proper diet.
4. Measures for controlling toxemias, temperature, dehydration and acidosis.
5. Drugs.

The two conditions can be discussed together under each of these headings except the one dealing with diet. This will be taken up in some detail.

*Initial Purgation.* It is usually advisable to begin with a forcible evacuation of the intestinal contents. Castor oil in doses ranging from two drams to one ounce is the most effective agent. It will sometimes be retained even when the child is nauseated and vomiting. Where it is persistently vomited calomel may be used in doses of 1-10 gr. to 1-5 gr. every half hour for ten doses. This should be followed in about three hours by two or three teaspoonsful of milk of magnesia.

*Period of Starvation.* It is usually better, especially in the severe cases, to withhold all food for from 12 to 24 hours. During this time it is very essential that the child receive a sufficient amount of fluids—two or three ounces for each pound of body weight in the 24 hours. This may be given in the form of plain boiled water, barley water or weak tea. The barley water or tea can be sweetened with saccharin.

*Food.* It is a mistake to starve these patients too long. 24 hours should be the limit. The nature of the food depends on the type of diarrhea.

In the fermentative type, with the greenish watery, acid, fermenting stool

there is a distinct indication for a particular kind of food. The disturbing organisms here thrive on a carbohydrate medium. With the excessive fermentation there is also an interference with the digestion of fats. So the proper food must be high in proteins with a minimum of fats and carbohydrates. These requirements are well met by protein milk. This is readily prepared from the powdered form put out by several different manufacturers. Some children take it better if sweetened with saccharin—using one grain to each quart. In the very toxic cases it is better to begin with small amounts, say half an ounce for each pound of body weight every 24 hours. This can be gradually increased until the child receives an amount equivalent to what it is accustomed to take of the ordinary milk feedings. In two or three days sugar in some form should be gradually added—the rapidity of its increase depending on the child's condition. This may be in the form of the maltose dextrin mixtures, Karo corn syrup or milk sugar. After the sugar is added the child can be kept on the mixture for some time. When the number and character of the bowel movements approach the normal, the protein milk can be gradually replaced by boiled skimmed milk. The fats are poorly tolerated and should be withheld for several days or weeks afterwards. Another useful food in this type of cases is lactic acid milk. The lactic acid seems to inhibit the growth of the harmful bacteria in the alimentary tract. As a matter of fact, the author has recently made use of skimmed lactic acid milk more often than of protein milk. In the severe cases it is usually diluted with an equal amount of water in the beginning. Some form of sugar is later added, just as is done with protein milk. When used without the sugar it can be sweetened with saccharin. Probably the most desirable of all the foods used is a protein milk containing lactic acid—similar to the preparation originally put out by Finkelstein. Such products are put out by manufacturing houses in powdered form.

In the infectious type, showing blood in the stools, we are usually dealing with some strain of the dysentery bacillus. These organisms grow readily on carbohydrate or protein media. Growing on protein media they produce toxic substances; on carbohydrates their products are harmless. Moreover, a certain amount of carbohydrate tends to inhibit their growth and development. So the indica-

tion is for a food high in carbohydrates with a minimum of fats and proteins (the fats are always badly borne). Lactose is the carbohydrate of choice as it is more slowly broken down and is more apt to reach the lower intestinal tract. However, dextri-maltose or Karo corn syrup can be used. They should be given in a 7 to 10 per cent solution. In a few days, depending on the amount of improvement, boiled skimmed lactic acid milk can be gradually added. This is finally allowed to replace the sugar solution. Cream of wheat can be added early. Also toast and crackers. Even pure sugar candy can be given in case the other carbohydrates are poorly taken.

*The Toxemia, Temperature, Dehydration and Acidosis* are all combated by the same therapeutic measures. Most of the severe symptoms are due, directly or indirectly to dehydration of the blood and tissues. This brings about aligurea and anurea with increased retention of nitrogenous wastes and acidosis.

Obviously, the indication is to restore the fluid balance. In mild cases where there is no vomiting sufficient fluids may be given by mouth. In the more severe cases it is often necessary to inject normal saline into the peritoneal cavity. Amounts ranging from 150 to 500 c.c. can be easily administered this way and repeated once or twice daily as long as necessary. The effects are sometimes nothing short of marvelous. The kidney soon begins to function, the toxemia is reduced, the acidosis is overcome and the tissues resume a more normal consistency. Colonic irrigations twice daily do good in most cases. The author employs a one per cent solution of boracic acid in the infectious type and a five per cent solution of bicarbonate of soda in the fermentative type. The irrigation is done through a soft rubber catheter (25 French) passed high into the colon.

Drugs play a small role in the treatment. It is impossible to give medicine strong enough to materially affect the microorganisms of the alimentary tract without injury to the patient. Bismuth in doses of five to ten grains every three hours possibly does no harm and may be slightly beneficial. The coal tar products should not be used for high temperature. This is better controlled by colonic irrigations and sponging. Hot stupes to the abdomen may help control the pain and tenesmus. Two to five grains of sodium

bromide every three or four hours may be given for nervousness and restlessness. When there is a great deal of pain and tenesmus, much straining with the passage of only small amounts of bloody mucus, or a tendency to prolapse of the rectum, opiates are usually necessary. Paregoric is the safest to use. It should be used in amounts just sufficient to relieve the discomfort. If carried farther than this it inhibits peristalsis, brings about retention of toxic substances in the alimentary tract with resulting systemic absorption. This, of course, increases the toxic symptoms. When sufficient fluids are given very little medicine is necessary. When stimulants are needed, caffeine, camphor, and adrenalin may be used hypodermically or intramuscularly.

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### FEEDING OF OLDER INFANTS\*

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It has been our observation in the Neathery Clinic of Sherman, Texas, that infants referred to us through the courtesy of the profession in Southeastern Oklahoma are exceptionally well nourished during the first nine months of life. This fact we attribute to the judicious use of breast milk when possible and, in its absence, to the use of lactic acid milk and Karo syrup after the plan of Marriott, as advocated by the extension Department of the University of Oklahoma. The object of this paper will be to begin where the period of usefulness of breast and lactic acid milk ends and to offer a few suggestions with regard to the feeding of older infants.

Infancy, according to Griffith, begins at birth and lasts until the temporary teeth have erupted or, in other words, until between the second and third years. There is no period of life when the nutrition of an individual is in such jeopardy. The physician who has watched the child's weight and development throughout the first nine months begins to relax his vigilance and the parents feel that their battle has been won. The mother permits the baby to dictate what food he will eat and when, while the father buys his smile and affection with candy, ice cream, raw fruits and nuts.

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\*Read before Southern Medical Association, December, 1927.

The most frequent errors of feeding older infants are as follows:

1. Irregularity.
2. Procrastination.
3. Radicalism.
4. Irresponsibility.
5. Unsuitable food.

The most frequently violated of these is irregularity. If the average parent ate and slept at the times and in the manner they permit their children to, they would have severe digestive disturbances. An infant should receive all the nourishing, plain food he can eat at four hour intervals during the day and for the first year a bottle at ten o'clock at night. Two-thirds of the gastro-intestinal difficulties could be eliminated with this simple procedure, and parents should have it impressed upon them by their family physician that a baby should be given nothing between meals but water. Regularity of rest and sleep, as I will show you in a few minutes, are as important as food. It should also be mentioned here that a regular hour for going to stool will assist in eliminating the problem of constipation.

Procrastination is not only the thief of time but it has cost the health of many children. A mother is told to wean the baby at nine months. She puts it off. The baby fails to gain. She gets worried and refuses to wean the baby because it is not doing well. She is afraid to consult her physician for she knows what he will say. The result is an undernourished child.

The breast milk does not contain adequate nourishment or mineral salts, especially iron, after about six months. Substitute feedings of a suitable formula should always be begun by six months with the addition of cereal and toast. This should be gradually increased, one bottle a month, until the baby is automatically weaned at about nine or ten months. The sugar and lactic acid are decreased week by week until the baby is getting plain boiled cow's milk at ten months. Cooked cereal at six months; vegetable water and Zwiebach at seven months; stewed fruit, vegetables passed through a sieve, egg yolk at eight months; and calf's liver at nine or ten months should be begun. In this way the problem of radicalism is overcome. Only in exceptional cases should sudden dietary changes in infancy be made.

Irresponsibility or, better, a failure to understand the importance of proper feeding on the part of the parents is, of course,

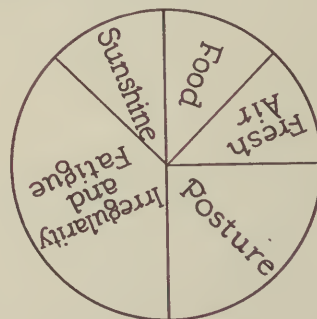
a great obstacle. This can be overcome only by propaganda and education extended principally through the profession. Young mothers have infinite faith in their physician and will frequently heed his advice when they will listen to no other.

With regard to the type of food, only the plainest and simplest of foods should be allowed any child until they are three years of age. A very well educated and refined mother brought her two-year-old boy into my office with a complaint of constant pain in the abdomen. In eliciting the history I found that the baby refused breakfast, had a piece of toast at 9:00 A. M., a raw apple and a nickel's worth of candy at 10:00, a banana at 11:30, refused lunch, and was given a hamburger on the way to my office because he cried for one. A similar history may be obtained from many of your own patients if you will take the trouble to inquire.

The results of poor feeding in later infancy are as follows:

- I. Malnutrition.
- II. Lowered resistance predisposing to:
  - (a) Acute respiratory infections.
  - (b) Infectious diseases.
  - (c) Gastro-enteritis.
  - (d) Diarrheas.
1. Parenteral.
  - (a) Naso-pharyngitis.
  - (b) Otitis.
  - (c) Pyelitis, etc.
2. Fermentative.
3. Infectious.
- III. Secondary anaemia.
- IV. Rickets.
- V. Scurvy.
- VI. Xerophthalmia, osteomalacia, etc.

Contributing causes of malnutrition with regard to importance:



Most of the above requires very little explanation. I wish to call especial attention to the diagram which was taken from a lecture by Fritz B. Talbot of Boston, to

the Post-graduate pediatric section of Harvard University. From it will be observed that food itself plays only a comparatively minor role in comparison to the routine of the child's life. As I have mentioned before, irregularity and fatigue are the outstanding factors. Too many mothers expect a two-year old child to attend all the picture shows, parties, automobile rides, and to entertain Daddy until 10:00 or 11:00 o'clock at night. Poor posture predisposes to malnutrition principally in older children and is usually the result of a pot-belly and softened bones of an early rickets. The results of a lowered resistance from malnutrition as above outlined are familiar to you in your daily practice. Remember, that a child with poor nutritional foundation is forever an easy victim for all infections.

Diet correction lies principally in the instigation of regular hours and habits. If the infant from nine months to three years is given one quart of milk and one green, cooked vegetable daily, an egg at least every other day, and the remainder of his diet consisting of cereals, cooked fruits, a small amount of properly prepared meat and liver, and a simple dessert, you will find he will not suffer from malnutrition provided he is supplied with all the vitamins. Vitamine "C" and "D", or in other words, orange juice and cod liver oil, must be added the remainder being contained in the above diet.

It is my custom to supply each mother with a special diet sheet. These are prepared separately for each of the age groups: the first from nine months to two years, the second from two to five years, the third for the school child. On the front of these are the foods suitable and I fill in the amounts not to be exceeded, together with the caloric value of each. On the reverse side of each sheet are the directions in detail for preparing each article of food. The mother is made to feel that each diet sheet is for her individual child by my filling in the quantities of each food and its caloric value in her presence.

Unless direct sunbaths are practical and available, each child is given cod liver oil in standard doses from nine to eighteen months.

#### SUMMARY

1. Danger period of infant feeding from nine months to three years.
2. Errors of feeding at this age due to:
  - (a) Irregularity.
  - (b) Procrastination.

- (c) Radicalism.
- (d) Irresponsibility.
- (e) Unsuitable food.

3. Malnutrition in physically normal children, due principally to irregularity, fatigue, poor posture, and lack of vitamins.
4. Diet correction and explanation are essential. Vitamins must be supplied.

—o—

#### FOREIGN BODIES IN AIR PASSAGES

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In discussing peroral endoscopy one is forcibly impressed with the rapid progress in the diagnosis and treatment of pulmonary diseases. A recent review of the subject by Soulas clearly reveals the remarkable developments that justify its use by the practitioner.

Foreign bodies in the food and air passages are common misfortunes usually resulting from accidental aspiration or swallowing. The foreign bodies are now found where formerly none had been observed. In a large series of cases reported and reviewed by Jackson foreign bodies in the air and food passages had been overlooked for a period from one month to thirty-six years.

The value of a good history in this type of work cannot be overlooked as the symptoms of gagging and choking frequently prove to be the essential factors in a very complicated case whose present complaint refers to some distant region. Patients who give a history of choking and gagging should be considered as foreign body subjects until proved to the contrary.

The symptoms of foreign bodies in the air passages are very elusive and vague in some cases and this no doubt accounts for the fact that foreign bodies are frequently overlooked and not found until some grave complication has developed. Unfortunately, there is often a period between the time of accident and the occurrence of symptoms that prove to be detrimental to the patient. During this period of time weeks or months may elapse and the original accident be forgotten until the discovery of the foreign body in searching for the cause of the complication.

The customary symptoms of foreign bodies in the air passages are those of obstructed breathing or irritation and in-

flammation. There is usually a history of choking and coughing, however, this is not obligatory. The physical signs are those following obstruction and must be very carefully studied. In certain cases there is no obstruction, such as a common pin in the bronchus. Foreign bodies of vegetal origin in children often produce systemic reactions simulating pneumonia and bronchitis.

In the diagnosis of foreign bodies the history, physical findings and roentgen-ray studies should be thoroughly studied. All subjects with obscure chest signs should receive the benefit of a roentgen ray study as innumerable foreign bodies have been discovered in this manner.

Due to the fact that signs and symptoms of foreign bodies often simulate those of common diseases such as pneumonia, bronchitis, empyema, abscess, bronchiectasis, asthma and tuberculosis, the practitioner is prone to jump at the outstanding symptom as well as the most conspicuous physical findings. Unless the possibility of a foreign body is considered in every case of pulmonary disease many foreign bodies will be overlooked.

The diagnosis of nonopaque foreign bodies in the air passage is frequently complicated and difficult. The excellent work of Manges shows that the outstanding changes are obstructive emphysema of both lungs with depression of both sides of the diaphragm and rotation of the heart with diminution of its transverse diameter at expiration. This diminished diameter can be definitely ascertained by actual measurements of the heart shadow on films exposed at the end of inspiration and expiration.

Foreign bodies in the air passages should be removed as soon as possible as they may become dislodged and migrate to more dangerous locations. The possibility of irritation by the foreign body causing edema, pneumonia and other lesions, should warrant the early removal of the offending member. Because one foreign body remained in the bronchus for years without causing any symptoms does not mean that all subsequent cases will terminate so favorably.

The common custom of beating the patient on the back, coughing and holding the head downward cannot be commended as many foreign bodies are dislodged by such methods and immediately land in other locations less favorable to their easy and

rapid removal. Many foreign bodies in the air passages have been dislocated by unnecessary movement of the patient and the resulting complications such as complete obstruction call for radical interference such as emergency tracheotomy.

Removal of foreign bodies from the trachea and upper air passages is relatively simple provided one has the necessary armamentarium. The removal of foreign bodies from the bronchi is more complicated and requires more effort on the part of the operator.

The technic of removal is that with which the operator is more familiar. In the hands of some the Killian method is preferable whereas others prefer the technic of Jackson, and others prefer the suspension method of Lynch.

In the opinion of the writer foreign bodies in the air passages require detailed study comprising a good history, complete physical examination, thorough roentgen ray study and removal at the earliest moment by the technic best suited to the individual case.

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## SEASONAL HAY-FEVER

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### A Study of Three Hundred Consecutive Cases

In the state of Oklahoma there are at least thirty thousand seasonal hay-fever sufferers, the cause of whose trouble in nearly all cases is pollen from the wind-borne pollinated plants. Practically every physician will have a number of these cases come to him each summer asking for relief from this distressing syndrome. Especially is this true of the man who deals with the nose and throat as a specialty.

Until relatively recent times, hay-fever was placed by the medical profession in the category of minor human ailments, and there were reasons for this attitude. In the first place, hay-fever never caused death; and in the second place, the physician could do little or nothing to relieve it. However, it is gratifying to know that this hopeless situation has been changed by the careful use of pollen therapy. At the present time, we have definite means of determining the cause of seasonal hay-fever. More attention to this disease is now demanded by those who suffer from

it. On account of the treatment being somewhat complicated, it is being largely investigated by men who are devoting their entire time to the work. Hay-fever today must be considered a controllable disease, and its tortured victims need no longer be neglected.

This paper is based on the study of three hundred consecutive cases of seasonal hay-fever. They are all private, ranging in age from six months to eighty-six years, and have been observed over a period of eight months to five years. This experience has given me a fair opportunity to study the hay-fever problem in this state. I will take up many phases of this disease, and will mention especially in detail the method of determining the cause and the use of pollen therapy in treatment.

#### ACQUISITION OF POLLEN HYPERSENSITIVENESS

The influence of heredity on the acquiring of pollen hypersensitiveness is admitted by all men working in the field of allergy. It has been carefully studied by Cooke and Vander Veer<sup>1</sup>, who have proved that it is transmitted according to the Mendelian law as a dominant characteristic. It has also been shown that bilateral inheritance will cause symptoms to appear at an earlier age in the offspring, than in the case of the unilateral. Pollen hypersensitiveness is a peculiar sensitivity of the ophthalmic and nasal mucous membranes of the patient to an ordinarily innocuous substance. These patients also have an associated hypersensitiveness of the skin to the same pollen. Advantage is taken of this fact by the physician in determining the pollen or pollens causing the patient's symptoms. It is difficult to understand why one patient should develop a sensitivity to a pollen at six months of age while another will go through life and not develop a sensitivity until in the seventh or eighth decade. In an unpublished paper<sup>2</sup> I reported cases whose hay-fever symptoms began at the ages mentioned, and I assume that the sensitivity developed just prior to the onset of symptoms.

It is generally believed by men working in the field of allergy that patients inherit a blood stream that has the ability to become sensitive but that they do not inherit a sensitivity to any specific protein. Personally, I believe that unless a person is born with a blood stream that has the ability to become sensitive, that it is al-

most impossible for that individual to become sensitive to any pollen protein; that the ability to become sensitive is handed down through the generations just like red hair or a Roman nose, although it may jump a generation, as will any other inherited tendency. Of the cases recently studied, 176 or 58.6 per cent had relatives of the first degree (father, mother, sister or brother) who suffered from hay-fever or asthma. One of my patients developed her symptoms at seventy-one years of age. However, out of the series studied, 124 or 43.3 per cent developed their hay-fever symptoms between the ages of fifteen and twenty-five.

It is impossible to say just why one patient will develop a sensitivity so early in life, and another one so late in life, and why such a large per cent will develop their symptoms between the ages mentioned. It is reasonable to believe, however, that it is due to the fact that at this age they come in contact with tremendous doses of pollen, so that massive contact with the pollen protein plays a part in causing the blood streams to develop this peculiar sensitivity. It is at this age (from 15 to 25) that men and women go out into the activities of life, which brings them in contact, from their traveling, with massive doses of pollen.

#### HISTORY

In the beginning the investigation of a hay-fever patient a detailed history is first in order. One should first take up the question of inheritance. The age of onset and close questioning concerning the early symptoms should be elicited inasmuch as hay-fever in infancy differs, to some extent, to patients in the adolescent period and in adult life. Careful questioning as to the sections of the state or United States in which the patient has lived should be asked, the exact date of onset of symptoms should be determined as carefully as possible, and one should always inquire as to whether symptoms entirely disappear at frost, inasmuch as a typical hay-fever case which is not complicated with other proteins, will disappear immediately with frost.

#### PHYSICAL EXAMINATION

The vast majority of typical seasonal hay-fever patients are far above the average in health, so a thorough physical examination, prior to treatment, is not necessarily indicated, but a careful investigation of the nose, accessory sinuses, and throat, certainly should be made.

## GENERAL HEALTH OF HAY-FEVER PATIENTS

In dealing with the hay-fever patient during the past few years my attention has been strikingly called to the fact that they are usually above the average in size and general health. On asking the question as to what other diseases they have had, a large percent of them will say, "I have never been sick;" so I have made special notes in my histories concerning this fact, and of the series reviewed, we found only one, or .33 of 1 per cent, who reported that her health had always been poor. Eighteen, or 6 per cent, reported only fair health, while 281, or 93.3 per cent, gave a history of excellent health. The per cent of patients reporting that their health had been exceptionally good seems high, but it is a very striking feature of the seasonal hay-fever patient. Every man who deals with allergy as a special line, has had this fact brought to his attention. The general resistance of these patients seems to be extremely high, so that if they develop any disease, whether it be infectious in type or otherwise, the tendency is for them to do much better than the average case. It is unusual to find patients with open pulmonary tuberculosis who are of the sensitive type. I know of a case, but in the 300 we have recently studied, there were none.

## RELATION OF HAY-FEVER TO ASTHMA

Seasonal hay-fever is a hypersusceptibility of the ocular and nasal mucous membranes towards a pollen protein, while asthma is a hypersusceptibility of the bronchial tree towards a pollen protein or some other protein. The majority of patients whose nasal and ocular mucous membranes are sensitive to pollen also have a bronchial tree that is likewise sensitive, but inasmuch as the majority of pollen first comes in contact with the nose, nature as a means of protection produces a large amount of mucous and washes it off so that the bronchial tree does not receive a very large amount of pollen although it may be quite sensitive towards the pollen. For this reason a patient may go through the summer with marked hay-fever symptoms, yet have no tightness in the chest, indicative of bronchial spasms; but at the end of the season, after the pollen content of the air is only a tenth as great as it had been on previous days, a patient may have a typical attack of pollen asthma due to the irritating effects of the cold air that appears in the early fall. In other words, a bronchial tree may with-

stand a comparatively large amount of pollen, if the air is balmy, but as soon as the first cold rains appear in the fall, a small amount of pollen, with the cold air, may produce severe attacks of asthma. Many patients go through their entire life with typical seasonal hay-fever without ever developing asthma. However, a large per cent of hay-fever patients some time in life will become typical cases of seasonal asthma, and if they develop a sensitivity to some other protein besides pollen, their asthma will continue through the winter, or even in some cases, if they are not sensitive to some other material, such as animal epithelial or powder of various sorts, they probably may continue throughout the entire winter.

In our series, 86 or 28.3 per cent had asthma associated in the fall of the year with their hay fever. Of the cases we studied the average age at the time they were treated was 31.1 years. Many of the cases treated, who do not have asthma as a complication, will develop it later on. So far as I can estimate, and it is the estimate also of others working in this field, that about 60 per cent of all hay-fever people, some time in life, will develop asthma. The majority of my cases do not develop their asthma until they have had hay-fever several years. However, it is not uncommon to see asthma associated with hay-fever in the first year.

Since the number of hay-fever people who develop asthma is so great, it certainly impresses one with the importance of protecting the individual from his hay-fever symptoms, inasmuch as the same treatment is a preventive measure against asthma.

## TESTING FOR POLLEN HYPERSENSITIVENESS

Most patients who have ocular and nasal mucous membranes that are sensitive to pollen, likewise have skins that are sensitive to the same pollen protein; and advantage is taken of this fact in determining the pollen or pollens responsible for the patient's symptoms. However, this is not true in 100 per cent of the cases. A small per cent, probably 1 per cent, have sensitive mucous membranes of the nose and eyes that can be determined by the ocular and nasal test, and have skins that are entirely non-sensitive to both dermal and intradermal tests. There are two definite methods of testing—the dermal and the intradermal. In testing for pollen sensitivity the dermal method is a good one. It showed a positive reaction in the

cases studied, in 98 per cent. However, some of the dermal reactions were very light and had to be read with considerable care. In these cases, with definite histories in which the dermal method is negative or is difficult to read, the intradermal method can be used. The technique for the dermal and the intradermal will not be described in this paper. In a previous article the technique has been described in detail.<sup>3</sup>

#### POSSIBLE CAUSES OF SEASONAL HAY-FEVER IN OKLAHOMA

As has been previously mentioned, the pollen from the wind-borne pollinated plants is the cause of all hay-fever. There may be a contributing factor occasionally, other than the pollen of the wind-borne pollinated plants, but it is never the sole cause. The elm and maple pollinates in the latter part of February and the fore part of March, and a few patients become sensitive to the pollen from these trees, but on account of the shortness of the period over which they pollinate, they are minor factors. The cottonwood begins its pollination between the 1st and the 7th of April and is a factor in certain sections. The oak pollinates during the latter part of April, but the period of pollination is short, consequently it has to be used only in a few cases. Bermuda, beginning to pollinate about the 15th day of May, and continuing until frost, is a very important factor either as a sole cause, or as a contributing one. In the cases studied we found Bermuda to be the sole cause in 13, or 4.3 per cent of the cases studied, and a contributing factor in 90, or 30 per cent.

About the 20th day of June, the amaranths and western water hemp begin to pollinate. In this state there are three amaranths — *Amaranthus retroflexus*, *Amaranthus spinosus*, and *Amaranthus palmeri* — that are scattered throughout the entire state; but Palmer's amaranth is not so generally distributed as are the other two. However, Palmer's amaranth is a very heavy pollinator and in those localities in which it exists, it is quite a factor. The other two amaranths are well distributed but are not big pollinators, and although patients are frequently found sensitive to their pollens, one usually finds such patients also sensitive to western water hemp. Since the water hemp is so abundant in plant life, and produces so much more pollens than the amaranths, its pollen should usually be used for treat-

ment in those cases sensitive to both the amaranth and the hemp. The amaranths must always be kept in mind and if patients are sensitive to them and not sensitive to the hemp, by all means the amaranths should be used if symptoms appear during the season of pollination of the amaranths. The peak of the hemp and the amaranth pollinating period is the 10th to 15th day of July, at which time patients who are sensitive to the amaranths and hemp group complain of symptoms.

Of the cases studied western water hemp (*Acnida tamariscina*) was the sole factor in 11 cases, or 3.66 per cent, and was a contributing factor in 105, or 35 per cent. Western water hemp is a very interesting plant inasmuch as it is so extremely well distributed over the entire state, as its growth is very prolific in many sections. Much has been said in the literature concerning the amaranths as a cause of hay-fever but in this state western water hemp is about five hundred times as abundant in plant life, and it is at least one hundred times a better pollinator than any of the amaranths, so that the actual amount of its pollen that gets into the air is several hundred times greater than that of the amaranths. It is for this reason that I feel that western water hemp is such an important factor compared with its close relatives, the amaranths.

After a recent investigation of the plant growth of western water hemp throughout the entire United States, it is interesting to find that there are only a few states in which it is a factor, but in Oklahoma it is a very important one, as I have shown by the percentage of cases in which it is a definite factor<sup>4</sup>.

Since so much has been said in the literature concerning ragweeds as a cause of hay-fever, both the laity and the physician have concluded that pollens other than ragweeds are of very little importance as a cause of hay-fever. Over many sections of the United States ragweeds are an important factor and likewise in Oklahoma they are very important, but one must keep in mind that they are not the only cause. In many cases they play no part and in other cases they are only a contributing factor. In our series ragweeds were the sole cause in only 76 cases, or 25.3 per cent. They were either the sole cause or a contributing factor in 266 cases, or 88.6 per cent. The fact that 88.6 per cent of the cases were sensitive to the ragweed shows their importance.

## MULTIPLE SENSITIVITY

My findings show that in seasonal hay-fever patients, multiple cutaneous reactions are the rule and not the exception, and this has been confirmed by many workers in the field of allergy. It is striking to notice the number of positive cutaneous reactions which have nothing to do with the clinical symptoms. As an example, we find many patients sensitive to the golden-rod, golden glow, dandelion, sunflower, etc., all of which are insect-pollinated plants. We know that the pollen from these plants play no part as a sole cause of hay-fever and no part as a contributing factor unless they are used in decorating. Patients may become sensitive to most any pollen, either insect-borne or wind-borne, but unless the pollen is wind-borne enough does not get into the air to cause symptoms. In the series studied, only five cases, or 1.66 per cent were sensitive only to one pollen protein. The remainder were sensitive to two or more pollens. The majority of patients that become sensitive to one of the ragweeds will become sensitive to all three, and if they have come in contact with all three, the pollen from all three ragweeds must be used. The patient that become sensitive to Bermuda, in the majority of cases will also develop a sensitivity to some other member of the grass family.

The botanical relation between the amaranths and western water hemp is a close one, so that in the large majority of the cases sensitive to western water hemp, sensitivity to one of the amaranths will be found. However, I have found a number of cases with a four plus sensitivity to *amaranthus retroflexus* that were absolutely negative to *amaranthus spinosus*, although it is a close relative. Likewise in this series I have found three cases sensitive to western ragweed that were entirely negative to giant and short. Bern-ton believes that a patient sensitive to giant or short ragweed also ought to be sensitive to western, because of the close biological chemistry of the pollen makeup.

Many seasonal pollen hay-fever cases are not only multiple sensitive to pollen but also are sensitive to other proteins, such as orris root, animal epithelial, etc. Multiple sensitivity to pollen is not given the consideration by the majority that it should have, and the lack of such consideration is the cause of many failures in pollen therapy.

## SYMPTOMS OF HAY-FEVER

A pollen seasonal hay-fever case that is uncomplicated in type will have symptoms at a rather definite time of the year, and such symptoms will end with frost. Symptoms will consist of one or all of the following:

- (1) Itching and lacrimating eyes.
- (2) Itching and congested nose.
- (3) Itching of the upper part of the mouth and back part of the throat.
- (4) Itching of the ears (itching of the Eustachian tubes).
- (5) Band-like frontal headache.
- (6) General depression.

Sixty-nine per cent of the series studied gave the following symptoms: itching and lacrimating eyes, itching and congested nose, itching of the roof of the month and itching of the ears. Eleven per cent gave a history of the band-like frontal headache. Twenty-two percent had rather marked general depression during the season. As has been previously mentioned, at the end of the season or during the season 86 cases or 28.6 per cent had asthma associated with their hay-fever. Many typical seasonal hay-fever cases are also complicated with sensitivity to some other inhalant protein, consequently their symptoms will not disappear at frost and they will complain of having some symptoms throughout the year, but being more marked in definite seasons, when the pollen gets into the air.

It is my experience that a sensitivity to protein, other than pollen or orris root, will not cause much itching of the eyes or increased lacrimation of the ocular mucous membrane, but other protein inhalants, such as feathers, pyrethrum, etc., will cause the itching of the roof of the mouth and especially is this true of feathers, animal epithelial of all kinds and pyrethrum.

## TREATMENT

There is probably no other disease that has had as great a variety of methods tried for the relief of symptoms as had been used in the case of the hay-fever patient. The typical seasonal hay-fever case should have a reduction of the protein diet during the season. Estivin can be used in the eye as a mild astringent. Various bland oils can be used on the mucous membrane of the nose as a mechanical means of protecting the membranes from the irritating pollen. The above suggestions will give slight relief in some cases. In

typical seasonal hay-fever cases seldom is there ever found polypi or infected paranasal sinuses. In the perennial cases however, polypi and infected paranasal sinuses are very common.

#### IS SEASONAL HAY-FEVER A SURGICAL DISEASE?

Until the last few years, a large number of typical seasonal hay-fever patients have had one or more of their turbinates removed, and in taking histories I find that a number of my patients, whose disease is of long standing, have had a lot of surgical work of various sort done to the nose. It is gratifying to note, however, that the newer cases have learned from the experiences of some of those who have suffered for a longer period of time, and who were operated on, had results that were not satisfactory. It is also gratifying to note that the nose and throat specialist today, who is a good observer, has learned that the less that is done to the nasal mucous membrane of the seasonal hay-fever patient, the better it is for that patient. They have also observed that in many of the perennial cases of hay-fever that have complicated with their hay-fever infected sinuses, that the same infected sinuses would drain themselves if the offending proteins were removed, thereby allowing the mucous membrane of the nose to become normal in size.

After a study of this problem for some time, I feel confident that the less local work of any sort that is done to the pollen seasonal hay-fever patient, the better off he is. I advise him to do nothing except instill into the nose or sniff into the nose some bland oil as a simple means of covering over the mucous membrane, thereby protecting it from the pollen.

Pollen seasonal hay-fever people who are complicated with a sensitivity to other proteins, frequently will develop sinusitis, infected antra or polypi in the nose. Such cases, by all means, should have the polypi removed, and the infected sinuses and antra drained, but this work should be done, if possible, at least six weeks prior to the onset of the pollen season, inasmuch as the surgical procedure will increase, to some extent, irritability of the mucous membrane.

Of the 300 cases studied, only 22 had either one or more turbinate bones removed. Of these 22, seventeen had associated with hay-fever asthmatic attacks either during the active season or towards the

end of the season. In other words, 77.2 per cent of the typical seasonal pollen hay-fever cases that had been operated on had associated with their hay-fever, asthma.

The percentage of all cases studied who suffered with hay-fever is 28.6 per cent. Comparing this percentage with that of those who had their turbinates removed, makes one feel that removing turbinates has something to do with bringing on asthmatic attacks. I personally have been made to believe from observing asthmatic cases in children, that the removal of tonsils is not the cause of some asthmatic children's being relieved from symptoms by the operation, but it is the removal of the adenoid tissue that is done at the same time, inasmuch as this allows the child to breathe through the nasal mucous membrane instead of the mouth, thereby warming the air before it reaches the bronchial cul de sac. I also have been made to believe that in pollen seasonal hay-fever cases whose turbinates have been removed, that the proneness towards asthma should be much greater, inasmuch as the air that is taken into the bronchial tree is not warmed sufficiently and more pollen actually comes into contact with the bronchial mucous membrane.

#### POLLEN THERAPY

Much has been said in the last few years pro and con concerning pollen therapy as a means of relieving seasonal hay-fever patients. Many physicians have treated seasonal cases by desensitizing them with pollen extracts without relief and have become somewhat disgusted concerning pollen therapy, and their patients have likewise been disappointed, and thereby are made to believe that there is nothing in pollen therapy. However, if one will stop and analyze the situation very carefully he will find it not difficult to understand why doctors have become somewhat disgusted with pollen therapy. In the first place patients, who have seasonal hay-fever, are always sensitive to one or more pollens and generally they are sensitive to more than one. In our study we found out of 300 cases 76 cases in which ragweed was the sole cause of symptoms; that 11 cases had their trouble due to western water hemp, and in 13 cases, Bermuda was the entire cause of trouble. This makes a total of 100 cases, or 33 1-3 per cent. In other words, 66 2-3 per cent of all cases studied had more than one group of pollens that were very definite factors in the cause of their symptoms. However, the

fact just mentioned is usually not taken into consideration by the majority of men in the treatment of hay-fever by pollen therapy.

A patient comes into their office complaining of fall hay-fever. He is treated with ragweed pollen extract without relief. However, a history will elicit the fact that his symptoms began in July and they became more aggravated in August, or the patient will tell the story how his symptoms were only fairly bad during May and June, but became more severe in July and very severe in August and September. On being tested, such a patient will probably be found to be sensitive either to Bermuda, some of the amaranths and ragweed, to the amaranths and the ragweed, or to Russian thistle and the ragweed. Such a combination as has been mentioned is very common. According to the cases I have studied, in at least 66 2-3 per cent of the cases such will be the findings. It has been my experience that a case who is sensitive to ragweed and who is also sensitive to Bermuda or one of the amaranths or to the thistle, will receive poor results if he is treated with ragweed only. He must first be desensitized against the pollens to which he is sensitive that appears in the air prior to the ragweed season, so that he can go into the ragweed season with a comparatively normal mucous membrane.

For example, the following is a very common finding in testing a patient:

**SELECTION of PROTEINS**  
*for the TREATMENT of HAY-FEVER*  
**and ASTHMA PATIENTS**

**Illustrative Case of Seasonal Hay-Fever and Asthma**  
*Patient sensitive to:-*

Giant ragweed	++++
Short ragweed	+++
Western ragweed	++
Prairie sage	+++
Cocklebur	+++
Western Waterhemp	++++
Amaranthus retroflexus	++++
Amaranthus spinosus	+++
Bermuda	++
Johnson grass	++
Timothy	++

**First symptoms appear about July 10th**

The illustrative case shows sensitivity to many pollens and yet only certain ones should be used in treatment. The patient's symptoms begin July 10th, more than a month prior to the time that ragweed pollen gets into the air. During this time, Bermuda and western water hemp, both of which are very prevalent in the state of Oklahoma, are pollinating. The patient will frequently tell you that his symptoms are only moderately severe in July and that he could get by fairly well, but that in August the symptoms are unbearable; and the doctor says, "Why treat with western water hemp and Bermuda? Why not treat these patients against the ragweed only, inasmuch as it is during August that they have so much trouble?" I wish once more to impress you, as I tried to in the foregoing paragraph, that unless this patient is desensitized first with western water hemp and Bermuda before he is desensitized against the ragweed that you cannot hope for results.

The correct pollen or pollens for treatment must first be chosen, and the failure to do this is one of the main reasons why good results in pollen therapy are not obtained.

#### POTENT EXTRACTS ARE IMPORTANT

Potent pollen extracts and extracts put up in such a form that the dosage can be carried up to the tolerance point and from that time carried through the season, are desirable. Commercial houses insist on combining pollens in one extract. The pollen extract that has probably the greatest sale in the United States is one made up of Johnson grass, Bermuda grass, and short and giant ragweed. If you will stop to analyze such an extract you will find that your rag weed product is being diluted down with your grass to such an extent that it would be impossible to get results. That is, if your patient is a ragweed case, the extract is not sufficiently potent to desensitize your patient; likewise if the patient be a grass case, your grass extract has been diluted down with your ragweed product.

It is quite pleasing to the doctor of course and also to the patient, to think that if he has hay-fever starting early in the spring and extending during the entire summer that one pollen product could be used for desensitizing, but this cannot be done, as it is entirely out of order to mix any two botanical groups, i.e., to mix a ragweed group with a grass, or the ragweed with the amaranth family, etc.

Commercial firms also have a tendency to want to give each patient the same number of doses, i.e., Mr. Brown, who weighs 225 pounds will have fifteen doses of some pollen extract to desensitize him against that pollen. His wife, who weighs 95 pounds, will receive the same number of doses. Is this logical? It is not the way other therapy is done.

#### CORRECT METHOD FOR POLLEN THERAPY

There is only one method for the use of pollen therapy, and it is pretty well accepted by the men dealing in this field of work, and that method is to be specific as far as possible. For example, giant ragweed is a very close relative to short, and likewise to western ragweed. It is such a close botanical relative that desensitizing against short ragweed can be done with the giant ragweed extract, but with only about 60 or 70 per cent as good results. The western ragweed should be used if the patient is sensitive to western ragweed instead of giant. This is likewise true of pollens in other groups, i.e., desensitizing against Bermuda can be done with Timothy since Timothy is a member of the grass group, but results are not nearly so satisfactory after such desensitizing, as would be obtained with Bermuda extract. In the majority of cases specific extracts can be obtained and are desirable.

#### GRADUATED DOSES OF PROTEIN EXTRACT FOR TREATMENT

.15cc	-----	1-40,000	Dilution
.15cc	-----	1-20,000	"
.15cc	-----	1-10,000	"
.15cc	-----	1-5,000	"
.25cc	-----	1-5,000	"
.35cc	-----	1-5,000	"
.45cc	-----	1-5,000	"
.15cc	-----	1-1,000	"
.25cc	-----	1-1,000	"
.15cc	-----	1-500	"
.25cc	-----	1-500	"
.35cc	-----	1-500	"
.45cc	-----	1-500	"
.1 cc	-----	1-100	"
.15 cc	-----	1-100	"
.2 cc	-----	1-100	"
.25 cc	-----	1-100	"
.3 cc	-----	1-100	"
.35cc	-----	1-100	"

#### HOW TO DETERMINE THE TOLERANCE DOSE

As one gradually increases the doses in pollen treatment, he will necessarily come

to a dose that will give a local or a general reaction, which will indicate that he has desensitized his patient sufficiently. If in treatment, for the sake of illustration, one gives .2c.c. of the 1:100 dilution and a fairly marked local reaction appears on the arm, or hay-fever or asthmatic symptoms are encountered, the next dose of the extract should not be increased but should be .2 c.c. of the 1:100 dilution. If this dose should give a local or a systemic reaction, it should be counted the maximum dose for that patient and from that time on, from seven to ten-day intervals, depending on the severity of the pollen season, it is wise to give a dose of the extract of the same size or just lower than the maximum dose. In other words, in this case, it would be .15 c.c. of the 1:100 dilution. If, on repeating the same sized dose the second time, no reaction is encountered, one is justified in stepping a little bit higher, say for the sake of illustration, up to .25 c.c. of the 1:100 dilution, and then if a reaction is encountered, repeat the .25 c.c. of 1:100 dilution again, and if a reaction is encountered on the second time, one must consider that, the high dose.

Always remember that in protein therapy, if a marked local or systemic reaction is obtained, that the symptoms can be relieved by giving 7 1-2 minims of 1:1,000 of adrenalin hydrochloride subcutaneously and repeat if necessary for the relief of symptoms within a half hour.

At the present time there is a new drug, ephedrin sulphate (fedrin) which relieves the untoward symptoms just as does adrenalin, and a good plan to follow is to have the patient carry with him two fifty-milligram capsules of ephedrin sulphate and explain to him that he may have hives, asthma or hay-fever following some of the high doses, and if at any time following treatment he should notice a tingling of the fingers or itching of the body, suggestive of hives, or any tightness in the chest, or hay-fever symptoms, that he should take one of the capsules immediately, and repeat in a couple of hours if necessary for the relief of symptoms. The author uses ephedrin sulphate routinely in this way. Both ephedrin sulphate and adrenalin overcome the symptoms by stimulating the sympathetic fiber of the autonomic nervous system.

#### PRE-SEASON TREATMENT

The treatment of choice is pre-season. The tolerance of the individual should be

gradually built up, prior to the season, at five day or four day or three day, or two day intervals, so that the maximum dose is reached a few days previous to the onset of symptoms, and then the maximum dose or a dose just beneath the maximum should be carried through the season from six to ten day intervals, as has been previously mentioned. In our series 208 cases were given pre-season treatment, with excellent results in 121 cases, or 58.1 per cent; good results in 75 cases, or 31.2 per cent; fair results in 10 cases, or 5 per cent; and poor results in 2 cases, or 1 per cent. By excellent results is meant the elimination of practically all hay-fever or asthmatic symptoms. By good results is meant the elimination of 80 per cent of hay-fever or associated asthmatic symptoms. It is considered that the elimination of 50 per cent of symptoms is a fair result.

#### CO-SEASON TREATMENT

Co-season treatment was done in 92 cases and the results were as follows: Excellent results in 35, or 42 per cent; good results in 41, or 44 per cent; fair results in 11, or 10.9 per cent; and poor results in 5 cases, or approximately 4 per cent. The same standard as to meaning of excellent, good, fair and poor results in co-season treatment is used as above in pre-season treatment.

In comparing the percentage of excellent and good results of pre-season and co-season treatment one can easily see that pre-season treatment is better. However, since 42 per cent of the cases received excellent results in co-season treatment, and 44 per cent received good results in co-season treatment, one is certainly justified in treating those cases after their symptoms have already appeared. Such patients can be advised that their results will be better if pre-season treatment is used, and can be advised that pre-season treatment is more efficient, and can be told when to come for treatment the following year.

The 300 cases of seasonal hay-fever that are here presented, have been studied rather carefully and deductions from the study have been drawn and presented in the preceding paragraphs. I trust that it will be of value to others who are interested in such work.

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#### SCHICK TESTING AND DIPHTHERIA IMMUNIZATION IN MUSKOGEE COUNTY

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During September, October and November, 1927, eight deaths occurred from diphtheria in Muskogee County, among infants and pre-school children, seven of them white and one colored. Some of these children lived in remote parts of the county, there was delay in treatment and four died in spite of large amounts of antitoxin. The virulent character of the disease, together with the fact that antitoxin had failed to save some of these lives, made the need for diphtheria immunization especially urgent. Through articles in city and county papers, distribution of literature and talks given before teachers and pupils in the county schools, people were acquainted with the facts regarding susceptibility to and active immunization against diphtheria.

Schick testing was begun early in November, one object being to determine the percentage of susceptibility to diphtheria in the various age groups. During November and the early part of December, 1699 Schick tests were performed, with distribution as follows:

Eight public schools in Muskogee County .....	831
Muskogee children in office of Co. Health Dep't .....	386

Two colored schools in Muskogee County .....	282
Oklahoma State School for the Blind .....	200
Total .....	1699

#### TECHNIQUE OF THE SCHICK TEST AND CHARACTER OF REACTION

The material for the test (E. R. Squibb and Sons) consists of a small vial with a drop of undiluted toxin, and a bottle containing 10 c.c. of saline, sufficient for 50 tests. The toxin is transferred to the bottle of saline immediately before using. 0.2 c.c. of the diluted toxin is injected intracutaneously in the skin of the forearm, the liquid forming a button-like swelling which disappears after a short interval. Observations were made on the fourth day following the test. Positive Schick tests

area scales and remains rough and clearly outlined, especially marked in colored children, for a period of from two to three weeks.

Table 1 shows the percentage of susceptibility for males and females in the various age groups, in a total of 648 children in seven public schools of Muskogee County. (Note: A number of the pupils in one of the schools had received immunizing treatments the previous year; these are not included in table shown on this page).

#### ACTIVE IMMUNIZATION

This consists of three inoculations of 1 c.c. each of toxin-antitoxin, given at seven day intervals. In Muskogee, the parents were urged to take the susceptible children to their physician at once for immunization. The Schick test proved to

**Table 1—Schick Tests in Muskogee County Schools, 1927**

Age Groups	MALES		FEMALES		Total	TOTALS		PER CENT SUSCEPTIBLE		
	Susc.	Imm.	Susc.	Imm.		Susc.	Imm.	Males	Females	Total
1	1				1	1	0	100		100
2	4	1	2	0	7	6	1	80	100	86
3	2	0	1	0	3	3	0	100	100	100
4	5	2	3	1	11	8	3	71	75	73
1 to 4	12	3	6	1	22	18	4	80	86	82
5	0	0	3	1	4	3	1	0	75	75
6	9	8	16	8	41	25	16	53	67	61
7	8	15	7	17	47	15	32	35	30	32
8	11	20	10	20	61	21	40	35	33	34
9	9	23	18	19	69	27	42	28	49	39
5 to 9	37	66	54	65	222	91	131	36	45	41
10	4	21	15	20	60	19	41	16	43	32
11	9	15	13	13	50	22	28	38	50	44
12	9	19	9	21	58	18	40	32	30	31
13	7	24	9	26	66	16	50	23	26	24
14	10	22	7	22	61	17	44	31	24	28
10 to 14	39	101	53	102	295	92	203	28	34	31
15	3	22	6	23	54	9	45	12	21	17
16	2	11	9	13	35	11	24	15	41	31
17	0	7	3	4	14	3	11	0	43	21
18	2	1	1	1	5	3	2	67	50	60
19	0	1	0	0	1	0	1	0	0	0
15 to 19	7	42	19	41	109	26	83	14	32	24
Totals	95	212	132	209	648	227	421	31	39	35

are striking, consisting of a small central area of discoloration, surrounded by an area of induration and redness round or oval in outline, the longer diameter often being three to four cm. In colored children a positive reaction is no less striking, there being a central spot of black discoloration, surrounded by an oval area of redness and infiltration extending length-

wise on the forearm. The skin over this be one of the best means of arousing interest on the part of the parents, the red area on the arm bringing a realization of potential danger and of the importance of the immunizing treatments. In one of the towns people of the community were ready to do anything, several deaths from diphtheria having occurred, and many children

were given the toxin-antitoxin by the local physician. In Haskell, through the hearty support of the superintendent of schools, nearly all the children from the primary grade through the junior high school were first Schick-tested and the susceptibles given active immunization by the family physicians.

Tragedies having occurred in the country districts, toxin-antitoxin treatments were given without preliminary Schick testing, in many of the district schools. 1,146 complete immunizations were given by the personnel of the County Health Department. No harmful effects were reported.

#### SUMMARY

1. Schick testing is valuable in pointing out beforehand the group of children that would be likely to develop diphtheria in an epidemic. A positive test also leads parents to act when they might otherwise defer immunization.

2. This is one field among many in which physicians and public health workers need to work hand in hand.

3. Active immunization against diphtheria merits the hearty support of all physicians, who can do much toward lessening the incidence of diphtheria by educating their clientele and immunizing children early in life.

Metropolitan Building.

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### A SKETCH OF THE HISTORY OF SURGERY

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R. H. HARPER, M.D.  
AFTON, OKLAHOMA

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(Read to the Rotary Club, Miami, Oklahoma, Dec. 20, 1927.)

Gentlemen: It is with no small degree of hesitation that I undertake to address you on The History of Surgery, and to call my paper a "Sketch" will be more appropriate; and I am not accustomed to addressing audiences other than doctors, and it is well known how difficult it is to speak the language of medicine in terms that may be understood by the layman; but I am honored to be here on the invitation of our friend, Dr. DeArman, and I shall do my best to make it worth your time; and I shall ask your close attention, for the field is so wide and the material so abundant, that I have been compelled to condense to a minimum what could be expanded to fill a large volume. I shall try

to present to you a brief history of surgery from primitive times to its full development in our own day.

Surgery is distinguished from medicine, even among primitive people, by the employment of instrumental and manual methods of treatment; it is as old as the human race and human needs; a certain skill in the stanching of blood, the extraction of arrows and other puncturing bodies, the supporting of broken limbs with splints, and the like, together with a reliance on the healing powers of the tissues, has been common to all men at all times and places, with all primitive peoples as well as the most advanced of the ancients in Egypt, Babylonia, China, India and the Heroic Age of Greece.

In both branches of our ancestral stock, the people of India and of Europe, surgical practice as well as medical reached a high degree of perfection at a very early period; among the former, in collections of writings under the names of Charaka, the older, and Susruta, later, whether these were actual names of men or of schools, ranging in date from 500 B.C. to 500 A.D., some dextrous and delicate operations are described. In the Susruta, 121 instruments are described that were made of steel, well shaped, with good handles and joints, with excellent cutting edges; they were to be kept perfectly clean, wrapped in flannel, and in a tight wooden box. Many of these early surgical instruments were like those in use today, and a splint for treating fractures, made of cane and rattan, was adopted by the British Army of India. Fractures were diagnosed and classified as today, and treated in the same way with splints, bandages and extension; wounds were divided into the same classes as with us, and treated very much as we do now; cuts were sutured, foreign bodies were extracted, and even a magnet was used to extract iron and steel bodies; bleeding was done, inflammations were treated by diet and poultices or fomentations; amputations were done, but they had not discovered as simple a thing as the ligature, but depended on boiling oil and pitch to stop bleeding, which helped some by the antiseptic properties of the heat and the materials; appropriate bandages were applied, and operations for various abdominal conditions were performed, and they became really skillful at removing stone of the bladder; repair of injuries of the nose and face were made by flaps from the face, transferred to the

place needed and left with a connecting pedicle, until union was secured, as is done today; various obstetrical operations were done, and even caesarian section; for every emergency, and for every known form of injury and disease, there were minute and elaborate directions given; different surgical operations were taught to the students with wax forms, dead animals, and flexible models of the human body; the various compounds of arsenic, copper, zinc, mercury and iron were known and used, and a knowledge of anatomy was deemed necessary, though their religion forbade dissection of the human body; all in all, a marvelous amount of knowledge and skill for so early a time, and, with the means at hand, wonderfully successful.

The Chinese were far behind the Hindus in knowledge of medicine and surgery, because of their reluctance to draw blood, or perform any operation on the human body, because they were forbidden to do so by their religion, which we shall see as we progress, has always been an obstruction to progress in the sciences. The distinctive and the only contribution of the Chinese to surgery or medicine was acupuncture, or puncturing the skin at the site of a pain with needles, and is still described in fairly recent text-books, but, at the best, a crude treatment. So we may dismiss the Chinese, who, in spite of five thousand years of civilization and history, have contributed nothing to either medicine or surgery, in ancient or modern times, because of their religion; such, we shall see later, is the blighting and withering effects of a dominating religion on the life and progress of a nation, whether in China, 2000 B.C., or 1926 A.D. in the hills of Tennessee.

In Egypt history goes back to as remote times as anywhere else in the world, but for the same reason as with Chinese, a religion of authority, fixed and unalterable, and a dominating priesthood, there was little progress in either medicine or surgery. But on monuments and walls of temples are figures of patients being bandaged or undergoing operations; mummies have been found with well set and healed fractures. Herodotus, who visited the country, described Egypt as being filled with specialists, particularly in operations on the eye, as their location, bordering on a sandy desert, would favor the incidence and prevalence of eye diseases, but this was all.

We shall now devote some time to the most wonderful people that have lived and worked, thought and wrote, in all the history of the world, the Greeks. Their earliest writings bear witness to a long growth of knowledge and skill. In the Iliad of Homer, the surgery is that of the battlefield, but of the most meager kind; Machaon and Podilarius, sons of Aesculapius, were the surgeons of the Greek army, but aside from binding up the wounds of the warriors, there is nothing of importance. But about 460 B.C., there arose a genius among the Greeks whose works are still outstanding landmarks in the history of medicine and surgery, and whom we regard as the Father of Medicine, Hippocrates—he came from a long line of the Asclepiadae, or medical practitioners and his grandfather and two grand sons bear the same name; the advanced condition of medical art among the Greeks of his time bear witness to a long period of development, and Hippocrates had much in the works of his predecessors on which to build his monumental and enduring work. The legendary Aesculapius had been deified, and temples of health, called Asclepieae, presided over by members of the fraternity called Asclepiadae, were erected in various parts of Greece as receptacles for the sick, and to which invalids resorted or were brought for the cure of diseases under the same circumstances as they now go to hospitals, sanitariums, and health resorts. Most of these temples were built at Thermae, or hot, medicinal springs, and the waters helped in the treatment of various diseases; at his entrance, the applicant was directed to go through a course of baths as a purification; abstinence from food for a few days was required and it was known then, as now, that rest, diet, change of surroundings, cure many human ailments.

In the beginning of the fifth century B.C., the temples at Rhodes, Cnidus, and on the island of Cos were held in especial repute, but that of Cos is of the greatest importance for us for having produced the individual who in all after ages has been known as Hippocrates, the Father of Medicine, and he is one of the foremost and outstanding men of all time. The purity of his life and ethics is well known from his Hippocratic oath, familiar to us all today, but preceding him, aside from the Homeric poems, the origin of Greek medicine and surgery is involved in impenetrable obscurity, being prior to all

recorded history; but there is no reason to think that much or any had been imported from Egypt or India, and at the time of Hippocrates, it had attained a remarkable degree of proficiency; he flourished at one of the most remarkable epochs of the intellectual history of mankind, and had for contemporaries, Pericles, the statesman and builder, the poets, Aeschylus, Sophocles, Euripides, Aristophanes and Pindar; the philosopher, Socrates, and his disciples, Plato, Xenophon, and Aristotle; Herodotus, the Father of History, and the younger Thucydides; the unrivalled sculptor, Phidias, and many other celebrated and distinguished names that have conferred immortal honor and fame on the tiny area of Greece and their age. Confucius, Buddha, and Zoroaster had left the stage of life but a few years before this time, the justly celebrated Periclean Age of Greek superiority in all the arts and sciences and philosophy. As a medical authority, Hippocrates stands pre-eminently illustrious for all time, and he left monuments of his genius more enduring than the marbles of Phidias, and as permanent contribution to the literature of the world as the writings of Plato and Aristotle, or the tragedies of Aeschylus or Sophocles, or the Odes of Pindar. He discarded the irrational theories of accumulated tradition, and all his descriptions of diseases, and all his surgical operations are derived from patient observation, and his conclusions are based on his own experience and common sense; more so than any other man for more than 2000 years after him; he knew the medicine of his time and had a good knowledge of anatomy; in the practice of surgery, he was a bold operator; he opened the skull with the trephine, for injuries of the head; he opened the chest for empyema and hydrothorax; his extensive work made him acquainted with all kinds of fractures and dislocations, as his treatises "On Fractures", and "On Dislocations" abundantly testify; and until fairly recent times, the treatment of fractures was far inferior to that of Hippocrates, and as to the nature of club-foot, he was 2400 years ahead of all others in saying that there is no dislocation, but a deformity, to be cured by appropriate bandaging, as that now done in any modern hospital for treatment of the deformities of children; his writings are models of conciseness, finish, "as much as possible in as few words as possible" and many of his Aphorisms are admirable today, as the one, "Life is short,

the art is long, experience fallacious and judgment difficult". (Adams, p. 192.)

I have given this much space and time to Hippocrates because he is entitled to it, and because that for more than 2000 years he was a mountain peak, compared with the decadence and the dead level of the dark ages that followed him, and I shall revert to this later, for the reasons for the retrogression.

After the age of Hippocrates, there was a decline in knowledge and but little change except for the worse, for 700 years, until the period of Alexandria, which stands out prominently for the study of anatomy, led by Herophilus and Erasistratus, and the boldness of operative procedures, and division of the art into a number of specialties. Herophilus boldly used the knife on internal organs, the liver and the spleen, the latter of which he considered of little importance, and we moderns have small reason to reverse his opinion of that organ; Lithotomy, or operation for stone in the bladder, was much practiced, and his instruments for performing that operation were much like those of the present day.

Celsus, in the reign of Augustus Caesar, at the time of the greatest glory of the Roman Empire, in his writings reflects the state of medicine and surgery of his day and for a period of several centuries preceding him in his work, *De re Medica*, and in the 7th and 8th chapters, gives a synopsis of Hindu and Greek surgery; an account of amputation of a limb is given in detail for the first time, and he also describes operations on the chest, and those for hernia. We owe much of our knowledge of the genuine writings of Hippocrates to Celsus, by reason of his quotations and comments and his sayings which were and which were not genuinely Hippocratic writings.

The next great figure in the history of medicine and surgery, for we cannot separate them, is Galen, of 130 A.D., but there is little of surgical interest in his writings, though they are important for anatomy, physiology and theories of disease, and the preparation of medicines derived from plants and still called Galenicals; but surgery was in a flourishing condition at this time and all over the Empire, as the descriptions, preserved by Oribasius, testify and Antyllus, who flourished A.D. 300, is regarded by the historian, Haser, as one of the world's greatest surgeons, consider-

ing his means at hand. An operation for aneurysm still bears his name; he operated for cataract, contractures, hernias, and urethral strictures, used ligatures on arteries, the first recorded in history, and did skillful operations on the head and face as well as on other parts of the human body.

Then another gap in progress for 350 years, to Paulus, of Aegina, who summed up three centuries of decadence and progress. His translator, Francis Adams, says: "His Sixth Book contains the most complete system of operative surgery which has come down to us from ancient times. Haly Abbas, 994 A.D., copies almost everything from Paulus; Abulcasis, of the tenth century, gives more original matter than any other Arabian author, but he is almost entirely indebted to Paulus, so with Rhazes and Avicenna, Arabians that became very proficient in medicine and surgery, but made no advances beyond Paulus. The account of fractures and dislocations given in Hippocrates and Galen may be regarded as almost complete, but Paulus went far beyond them in actual work and in the application of the art of surgery; his sixth book brings the surgery of the ancient world to a focus, with no improvement till the time of the Frenchman, Ambrose Pare, and for the intervening 500 years, there is nothing to record save the establishment of a hospital at Lyons, 560, A.D., and one at Paris, 660, and at Montpellier, 1025; much of the medical and surgical practice was in the hands of the priestly orders, especially the Benedictines, but the practice of surgery was forbidden to them at the Council of Tours, in 1163. But original investigation had died out, and there were no bold and daring spirits to continue the work of the fathers of Surgery, and for the reasons, we shall have to retrace our account, and revert to the Semitic Race, and its contribution of a religion of authority, an organized priesthood, a collection of ancient writings of ignorant and superstitious men, as of supernatural origin, these being the cause of the ignorance, superstition, decay of all the contributions of the Greeks and Romans in science, art, literature, laws and learning, imposing fetters of priestly rule, obstacles to any progress, complete suppression of the intellectual freedom of man, for 1500 years, and is still in full force and effect today; but its organization and structure, the strongest and most enduring in all the history of the

human race, is slowly crumbling under the assaults of bold and daring minds since the time of Galileo and Descartes, and the Renaissance, or modern enlightenment. Our ancestors have passed through a long, dark bloody period of myth, magic, superstition, belief in legends, of authority of priests and worship of many gods in ritual and religion, and now it is to be hoped is entering upon a time when science, knowledge will be the directing force, leading to the service of humanity instead of the supernatural.

In Egypt, the valley of the Nile in Africa and in the valley of the Euphrates and Tigris rivers, in Asia, are found the most ancient records, monuments, temples and recorded history of the human race; both flourished at about the same time, and both made wonderful advances in civilization, especially in building temples and monuments to their gods. The entire life and activities of these people were devoted to the religious ideas of appeasing and gaining the favor of the gods; the clear air of both countries favored observations of the stars, and they gave us the divisions of the year, the months, the week of seven days, and even the hours and minutes of the day, but the entire life of the people was a never ending observation of religious rites and ceremonies and nothing else, but perhaps war, mattered. The Code of Hammurrabi, 2250 B.C., is evidence of a high state of civilization by its laws, and the Hebrew Legends of Creation, the Garden of Eden, the Flood, Noah and the Ark, are but revised and abbreviated editions of the Babylonian legends of more than 2000 years earlier. The Code of Hammurrabi gives some of the penalties for failure in operations by the surgeons of the time; like many of our own laws, they were either ignored, or a surgeon would have been a bold and daring man to risk his life and property if he had a bad result with a simple operation. It might be supposed that as old as are some of the Hebrew writings, that we would learn some of the medical and surgical art of their time from those that have been preserved for us in the older books of the Jews, which were written and re-written, edited and re-edited, combined and added to by every scribe that copied the older ones, finally taking form as we have them in the Hebrew Bible about 300 B.C., but its stories are only poor copies of earlier ones, its historical parts sadly lacking in any exactitude, its science and art only

that of any other barbaric people, and the only surgical procedure recorded by them in this scrap-book of poor history and worse religion is that of circumcision, a ceremonial rite that had been performed in the same barbaric way by other primitive tribes all over the world, and not original with the Jews; and these Jews, who have played so large a part in the later history of the western world, gave us no science, no art, and a literature, that, judged by any critical comparisons with the exception of a small part here and there is poor indeed, but they did give us their religion, based on their conception of a tribal god, Jahveh, jealous, cruel, vengeful, deceitful, like any other oriental despot or tyrant; their entire life and activities were given to appeasing his wrath and gaining his favor, and with its later developments in the Roman Empire has left its record of intolerance, sectarian hatred, war and blood-shed over the western world for 2000 years; nothing was of any importance but a satisfactory relation to a supernatural being, and an assurance of some degree of happiness in a life hereafter to make amends for the miseries of life in the world; the conception of humanity, altruism, making life better and more enduring is the product of knowledge, science, and the broadening culture of the last century more than all previous time, and we may include all other religions, except the Greek, in this same indictment. Why did the remarkable attainments of the Hindus fade into nothingness, and they are today sunk in ignorance, superstition, filth and disease? The answer is, their religion. Why did the Chinese never develop any science worth mentioning? The same answer. Brahmanism and Buddhism both teach the utter worthlessness of human life and the uselessness of human endeavor against fate, Kismet, the god, hence why struggle against them? Why try to avert sickness, pain, poverty, filth, disease, death, for life is nothing, the hereafter everything. Why did the wonderful progress of the Greeks and the Romans die out, almost as if they had never been, in the Dark Ages of Europe? The fundamental idea of Christianity is the same as the other oriental religions, and it is an oriental religion, engrafted on western civilization; it taught that life is nothing, the hereafter all, and conformity to the priestly interpretation of obscure and vague texts the all in all of human life; sickness, pestilence, disease, famine, poverty, sin, were the punishment of an angry

and jealous god, and war was the principal occupation of his people; the divine favor was only secured by unquestioning belief and grovelling worship and obedience to the rules of the church, and those who did not believe and worship in conformity to the dominant majority were dealt with singly in dungeons, prisons, auto-da-fes, or in wars of extermination, instead of practicing the teachings of the Nazarene. Europe was a continuous battle ground for fifteen centuries; instead of cultivating the arts and sciences, they persecuted each other with fire, sword, prison, and death; no one dared question or deny accepted authority on pain of prison, torture, seizure of property or death; not only medicine and surgery, but all forms of knowledge, except that little sanctioned by the church, was totally suppressed by the blighting, withering, smothering hand of priestly rule, and ignorance, intolerance, superstition, in the guise of religion, ruled the world for fifteen centuries; but we have made some progress; beginning 400 years ago, with Galileo, Bruno, Kepler and Copernicus, daring spirits began to question the authority of the church to suppress the activity of the human mind; the best work on this period is that of Dr. Andrew D. White, in his work, 'The Warfare of Science and Religion'; such martyrs and heroes for the freedom of the mind, and the advancement of knowledge, as Galileo, Savanarola, Servetus, Spinoza, Voltaire, Hume, Huxley, Darwin, Kant, and thousands of others, have gained a reasonable degree of intellectual freedom, but we see today the dying struggles of the same superstition and ignorance in the widely expressed opinion of spokesmen of the ancient god that the Florida storm was a visitation of the wrath of the Almighty for the sins of men, and also in the so-called "anti-evolution laws", that have been passed in Tennessee, Mississippi, Alabama, and the passage of which has been or will be attempted in several other states, as an entering wedge for the control of the public schools by the church. But such laws only add impetus to the progress they would crush, and are like the noted Mrs. Partington, who would sweep back the tide of the sea with a broom. If science has any motto at all, it might be the gem found among much more of less worth, "Ye shall know the truth, and the truth shall make ye free"; free to investigate, and find out the wonderful ways and works of nature, and let the

truth lead where it may, and any system, church, religion, politics not based on truth and freedom will perish. The legends of Genesis are well worth study as ancient literature, but as fetter to bind the mind of man are obstacles to progress. Like many other old things, they are worthy of respect for their human interest, but they have served their time and age, and if the advocates of Genesis choose to set its primitive account against history, geology, astronomy, and modern knowledge, so much the worse for Genesis and its advocates.

With this rather long attempt at giving a reason for the decadence of learning from the acquirements of the ancients, we shall resume the account of surgery; the dead level of decadence and submission to the church continued unbroken during the middle age, with the exception of a few names, as that of William of Saliceto, and his pupil, Lanfranchi, and of Pitard, who accompanied Saint Louis on his crusade to Palestine, but modern medicine and surgery begins with Paracelsus, Andrew Vesalius, Gabriel Fallopius, and above all, Andrew Pare; the great merits of Paracelsus were not so much as a reformer of surgical procedure, but rather as a direct observer of natural processes of diseases and their treatment; his description of hospital gangrene is true to the disease, and his observations and theories of syphilis are sound and true and he pointed out the connection of goiter of the parents and cretinism in the children, and he left two works on surgery.

Ambrose Pare (1510-1590), threw aside tradition and used his own resources. Instead of treating gunshot wounds with hot oil and pitch, he used simple bandages and dressings, and revived the use of ligatures to prevent hemorrhage. The introduction of firearms had revolutionized the surgery of war, and Pare was quick to adapt his practice to the new conditions. His work in the crude field hospitals, on the battlefield of the wars of France read as if it were written but recently, with the exception of the lack of anaesthetics and antiseptics; he wrote a work on War Surgery in 1545, retired to study anatomy, and in 1550 gave the world the first treatise on that subject; his most memorable achievement was to get the ligature adopted, and make amputations safe and possible for the first time in all history. He wrote in the language of the people, instead of bad Latin, and was free from

the mystical theories that spoiled the writings of Paracelsus; he was adored by the army, and greatly esteemed by successive French kings, but as frequently happened in after time with innovations, he was opposed by the faculties of the colleges, and he had much opposition in getting the ligature adopted, strange as it seems to us now. Surgery of the 16th century underwent the developments opened to it by the new forms of wounds inflicted by new forms of warfare, especially gun-shot wounds; a radical cure of hernia by the use of sutures and ligatures was worked out, strictures of the urethra were treated, and plastic operations were once more done with the skill that the Hindus had attained, fifteen centuries earlier, but had been forgotten. Ambrose Pare is by far the most prominent figure of the 16th century in the history of surgery.

A knowledge of the body, anatomy, is necessary for good surgery, and up to this time it was imperfect. Andreas Vesalius became interested in dissecting and became noted for his work, but he was hampered by the dictum of the church, the theologic idea of the sanctity of the human body and its resurrection, even though the Catholic Inquisition, headed by Torquemada, burned perhaps 200,000 heretics in the domain of Spain; in the States of Germany, and with the express approval of the pious Luther, Dr. White says that 100,000 were burned as witches; the priestly authorities commanded Vasalius to quit dissecting and to burn his books, which he did in a fit of anger; but he had left the magnificent work, "*De Fabrici Humani Corporis*", with its beautiful and accurate drawings intact; later, his pupil, Gabrielle Fallopio, gave the world a more complete work, his "*Observationes Anatomicae*", in 1561, and established the modern study of anatomy on a solid and enduring base.

The 17th century was distinguished rather for rapid progress of the knowledge of anatomy and physiology than for a high standard of surgery; the treatment of gunshot wounds as taught by Pare was confirmed, and flap amputations, forgotten since the days of Heliodorus. 1500 years earlier, were again used. William Harvey, in 1640, demonstrated the circulation of the blood through the heart, arteries, capillaries and veins, and made another landmark of progress. Von Hilden introduced the tourniquet, and Lowdham and Wiseman, of England, further per-

fectured surgical technique. Operations for strangulated hernia, for stone in the bladder, the transfusion of blood, and the first real cataract operations were done, and Wiseman's "Seven Chirurgical Treatises", published in 1676, were remarkable for originality, daring and sound principles, and he was regarded as the father of English surgery; in the 18th century, surgical practice and knowledge were established on a broader and more scientific basis; the Academy of Surgery was organized in Paris, in 1731, and among its members were Petit, Chopart, and Desault; in London and Edinburgh, dissecting rooms and anatomical museums were established, of which the most noted was that of Dr. William Hunter, and his more famous brother, John Hunter, one of the most notable men of this century; the practice of surgery began to be separated from that of the barbers, but we still have the reminder of that time in the fact that in England at the present time, a surgeon has no professional title, but is known as "Mr. Blank"; at this period, in Germany, it fell to the lot of the regimental surgeons of the army to shave the officers, but under the leadership of Von Holtzendorf in Berlin, and the Joseph Academy in Vienna, the Germans made rapid progress, and were soon pre-eminent; the first teaching of surgery in the United States was by Dr. Shippen of Philadelphia, near the end of the century.

A great part of the advances of the 18th century was in surgical pathology; Petit's observation of the formation of thrombi, Hunter's account of the process of wound-healing, Benjamin Bell's classification of ulcers, Duhamel's description of the repair of bones, Pott's account of spinal curvature and its cause, Cheselden, of nerve tumors, and his operation for lithotomy and cataract, Hunter's operation for aneurysm, Pott's treatment of fractures, Gimbernat's for hernia, Chopart's foot amputation were some of the most remarkable things accomplished in this century.

Two things occurred about the middle of the 19th century that put surgery on a secure basis, and promoted unlimited development; Pasteur, working with the microscope, and animal broths, found that in the high altitude of the Alps, the pure air had no germs, and that the broths kept indefinitely, and that the same result followed heating and sealing his tubes; Joseph Lister read of Pasteur's work, and decided that an antiseptic would do the same thing, and on August 12, 1865, operated on a case of compound fracture, with complete success. The idea spread rapidly and other antiseptics as well as heat was used and operations became safe from the infections, gangrene, and suppuration and high mortality of former days. Morton, a Boston dentist found that sulphuric ether would induce sleep and insensibility to pain, and on October 16, 1846, at the Massachusetts General Hospital of Boston, in a room still preserved as it was that day, he gave ether, and Warren operated before a class of students and doctors and is reputed to have said, "Gentlemen, this is no humbug"; there is a well known picture of Morton standing by the side of an idealized woman, and the astonished Warren beside him, that will induce a feeling of reverence in any thoughtful man and Oliver Wendell Holmes named it "Anaesthesia", and Weir Mitchell, "The Death of Pain"; in 1847, Simpson, at Edinburgh, used chloroform, and these, with the work of Pasteur and Lister gave to the world safe and painless surgery, and deserve the lasting gratitude of all mankind for all time; and surgery progressed further and wider in the last quarter of the 19th century than in all the previous time that man has been on the earth and the 20th century has seen a perfection of detail and successes undreamed of, even twenty-five years ago, and my most sincere wish is that I could live a thousand years, and see the unfolding of human knowledge and accomplishment, not only in surgery, but in all fields of human endeavor, for the race is only in its infancy and things will be discovered that will revolutionize the life of man, when the vast energy of striving after the imaginary hereafter will be devoted to humanity, and the here and now, and the elimination of disease, poverty, ignorance and superstition and man becomes what his capacities indicate, a rational, reasonable being, capable of governing himself with some degree of fairness and in the sense of the old Greeks, virtue and equanimity.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol XXI

MAY, 1928

No. 5

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

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Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

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PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

### EDITORIAL

#### THE LAST CALL.

Elsewhere in this issue will be found complete program of the Tulsa meeting, May 17, 18, 19. Some additions may be made to this program, and if so, they will appear in the hand books issued for the use of those attending the meeting.

We urge the members to carefully read this program in order to better select which section or sections they deem best for their particular needs. It is regrettable that most of these sections cannot be attended by each and every mem-

ber, as they certainly offer subjects with which the great majority of our members are deeply concerned. Highly technical and scientific subjects are undoubtedly of great worth to the specialist, specializing in such subjects and to the student peculiarly interested in them, but our membership derives more benefit from practical papers, papers covering the problems with which they may be confronted at any time. As our meeting is now divided into five sections it is manifestly impossible for the attendants to attend more than parts of one, at the most two sections.

We believe the Tulsa meeting will be found unusually well worth while. We believe that under our system the various phases have been divided as equitably as possible, considering the rights and demands of each of the interests concerned. We urge our members to read carefully and follow the suggestions offered as to preparation of papers in the preamble of the program. Compliance with these suggestions is complying with the proper system, otherwise confusion certainly results.

The first thing a member should do upon arriving in Tulsa and finding his hotel, is to visit the registration booth on the 2nd floor of the Akdar Temple, register, receive badge, program and information as to clinics and other local activities.

#### NATIONAL HOSPITAL DAY MAY 12TH

This is a reminder that May 12th is National Hospital Day throughout the country. This day, selected in memory of Florence Nightingale, should yearly become more important and more sacred to hospitals, hospital staffs and managements, physicians and nurses throughout the land. Observance of this day will create a greater pride in our hospital system and call attention of a neglectful public to the need of the hospitals and will impress upon the public the fact that the hospitals of the country are rapidly becoming indispensable necessities of our civilization.

#### Editorial Notes—Personal and General

DR. A. C. HIRSHFIELD gave a talk on "Pelvic Infections" before a joint meeting of the Hughes-Seminole County Societies at Wewoka on March 15th.

DR. WM. LANGSFORD of 323 East 11th at Oklahoma City, spent the month of April at Claremore recuperating from a recent illness.

MAYES COUNTY MEDICAL SOCIETY met April 4th, at the office of the Secretary, Dr. Iva dell Rogers. Papers were read by Drs. Hillis and Whitaker of Pryor.

DR. and MRS. C. E. NORTHCUTT, Ponca City, have left for Baltimore, Cleveland and points in New York, where Dr. Northcutt is to take post-graduate work in surgery in different clinics.

DR. GEORGE R. TABOR, 324 American National Bank Bldg., Oklahoma City, recently read a paper before the Oklahoma County Medical Society on "Medical Ethics", copies of which may be had for the asking.

DR. E. E. LEHMER, Oklahoma City, left on April 1st to spend a month in clinical work at Massachusetts General Hospital and Harvard University Medical School, after which she plans an ocean trip through the Gulf of Mexico before returning to her practice.

A SYMPOSIUM on "The Problem of Advanced Tuberculosis" constituted the program of the Grady County Medical Society April 6th, 1928; Drs. P. M. McNeill, A. D. Young, L. J. Moorman and Horace Reed, all of Oklahoma City. The program was preceded by a dinner at the Early Hotel.

MALTBIE CHEMICAL Company, Newark, N. J., have contributed a grant for research fellowship for the coming year to the Department of Chemistry of Princeton University. The research work will cover certain phases of chemistry of creosote and creosote compounds.

WOODS COUNTY MEDICAL SOCIETY held their regular meeting in Alva, March 26th. with a luncheon served at the home of Dr. O. E. Templin. Dean LeRoy Long, of the University of Oklahoma Medical School at Oklahoma City, addressed the meeting.

A JOINT MEETING of the Okmulgee and Okfuskee County Medical Societies was held in Okmulgee, May 9th, with a large number of physicians attending from Sapulpa and Tulsa. Dr. Clinton K. Smith, Kansas City, was the principal speaker. His subject was "Pyelitis in Children."

OTTAWA COUNTY MEDICAL Society met April 11th at their outing club on the Cowskin River. About 35 physicians were present. After an out-door dinner, Dr. G. L. Herrington of Kansas City, delivered an address on "Psychology and Medicine." The out of town visitors were Drs. Edwin J. Rose, in charge of the U. S. Veterans Hospital, Muskogee; J. Hutchings White and Claude Thompson, Muskogee.

CREEK COUNTY MEDICAL SOCIETY met April 5th, with a number of doctors from Tulsa as guests, and Dr. Carl Puckett of Oklahoma City. Dr. C. T. Hendershot, Councilor, Tulsa, delivered a talk on "Fraternity of Medicine." "The Re-

liable Symptom of Heart Disease" was shown by Dr. Wm. J. Trainor, Tulsa, through the use of lantern slides. Use of the X-Ray and some of the common skin diseases was demonstrated by Dr. W. A. Showman, Tulsa.

OKMULGEE and OKFUSKEE MEDICAL Societies held their joint meeting at the Legion Hut, Okemah, Monday, April 9th. The dinner, served at 6:30 P.M. was furnished by the American Legion Auxiliary. The following program was given: "Some Remarks About Goitre," Dr. LeRoy Long, Oklahoma City; "Gastric Ulcer," Dr. A. W. White, Oklahoma City; "Address," Dr. L. S. Willour, Councilor, McAlester.

DRS. A. J. WEEDN, D. LONG, B. H. BURNETT, L. L. SMITH and J. B. CARMICHAEL, all of Duncan, were guests of the Grady County Medical Society, April 6, at a dinner at the Early Hotel, Chickasha. Following the dinner, the society adjourned to the Chamber of Commerce where a symposium on Tuberculosis was given by a group of Oklahoma City doctors. The lectures were illustrated with lantern slides.

AMERICAN ASSOCIATION for the Study of Goiter will meet in Denver June 18, 19, and 20th. Among the distinguished guests will be Dr. Breitner of Vienna and Dr. Albert Kocher of Switzerland. Representatives interested in goiter work from many clinics in the United States and Canada will be present. This is the 5th year of meeting of this Society and as the problem of goiter is constantly increasing it is expected that the meeting will be very largely attended.

TRIPLETS WERE BORN to Mr. and Mrs. Mack Watson, Calhoun, Oklahoma, April 12th, 1928. All three females, weighing 6, 5, and 5 lbs. respectively. First baby born was head presentation, other two were breech presentation. There were two placentas, two cords attached to one, and one cord to the other placenta. Mother is 29 years of age, and has three other children, one boy 7 years of age, one boy 4 years of age, and a girl 23 months of age. Mother and all three babies are doing good, reports Dr. Harrell Hardy of Poteau.

STEPHENS COUNTY MEDICAL SOCIETY held an interesting meeting, March 26th, when the members of the Grady County Medical Society were their guests. Dr. A. B. Leeds, Chickasha, reported an interesting case of chronic constipation. Dr. A. B. Chase, Oklahoma City, lectured on some of the diseases of the heart. Dr. Roy Emanuel, Chickasha, read a paper on internal injuries of the head. Dr. H. Coulter Todd, Oklahoma City, made an interesting talk on how infections of the antrums may be produced. Dr. Rebecca Mason, Chickasha, gave a general talk and Dr. W. H. Livermore, Chickasha, made a talk on Good Fellowship among doctors.

THE MUSKOGEE COUNTY MEDICAL Society were the guests of the Staff of the U. S. Veteran's Hospital, Muskogee, April 9th. Drs. A. L. Stocks, H. L. Scott, and H. T. Ballentine were elected delegates. Dr. F. J. Wilkiemeyer presented two cases of "Pernicious Anemia" improved by Liver Extract. Dr. C. E. Clay presented two cases of "Aortic Aneurysm" and one of "Auricular Fibrillation." Dr. E. Levi presented several cases of "Tuberculosis," stating the requirements for diagnosis and what constituted activity and arrest. Dr. Glenn Mullins presented a case of "Mitral Stenosis." Dr. A. L. Mobly presented a case report of "Osteomyelitis." Dr. C. A. Thompson presented several cases under the title of "Acute Abdominal Cases, too long acute."

THE GARABEDIAN CLINIC FOR CHILDREN announces the acquisition of Dr. Harry J. McGuire, recently from Chicago. Dr. McGuire will be in charge of and limit his work to gynecology and obstetrics.

DR. HARPER WRIGHT, vice-president, State Board of Medical Examiners, visited clinics in Chicago, Buffalo, Toronto and New York, spending six weeks in the clinics in New York and Brooklyn in March and April.

STEPHENS COUNTY MEDICAL SOCIETY had an interesting and instructive meeting in Duncan April 24th. Drs. LeRoy Long, Sr., LeRoy Long, Jr., Lea A. Riely, H. H. Turner and Stone were present from Oklahoma City. Dr. LeRoy Long, Sr., reported an operation on gall bladder drainage and then talked on diseases of the thyroid gland. Dr. Riely gave a talk on pernicious anemia.

### THE DOUBLE TEST OF PITUITRIN

The work of Kamm and his associates in demonstrating the existence of two active principles in the posterior lobe of the pituitary body, one of which acts on uterine tissue and the other on blood pressure, has aroused great interest in scientific circles, and especially among physicians. The Journal of the A. M. A. gave it leading editorial space in the Feb. 25 issue, and subsequent work in the Thorndike Memorial Laboratory has confirmed the opinion of the Parke-Davis technicians that the blood pressure raising hormone accounts for the antidiuretic or antipolyuric effect of Pituitrin (New England Journal of Medicine, March 15, 1928). It is therefore extremely improbable that the posterior pituitary

lobe contains more than two active principles.

But it does contain two. And these two are normally present in certain proportions; so it would seem that Parke, Davis & Co., who gave the profession the first pituitary extract and named it Pituitrin, have been fully justified in applying two tests—oxytocic and pressor—to their product for the past ten years. Pituitary extract is of service in other than obstetric cases, and its value depends in part upon its ability to increase the tone of the arterial system.

Parke, Davis & Co. have just issued a booklet on Pituitrin, which will of course be sent promptly to inquiring physicians.

### DOCTOR S. AUGUSTUS RICE

Dr. S. A. Rice, practitioner of Velma, passed away at his home February 23, 1928, advanced age causing his passing. Funeral services were conducted by Rev. Davis of the Christian church, and interment was in the Alma cemetery.

Dr. Rice was born in Arkansas October 8, 1856. He had been in active practice since 1890. Coming to Texas at an early day he practiced at Lebanon, Justin and Salina. Since 1898 he had been a resident of Indian Territory and the State of Oklahoma. Dr. Rice had been a resident of Stephens county for the past 12 years. He first came to Alma, and removed to Duncan in 1923.

The deceased is survived by his wife and one son.

## Report of Examination for Licenses to Practice Medicine

Report of Oklahoma Board of Medical Examiners, held in Oklahoma City, March 13, and 14, 1928; number of subjects examined in, 12; total number of questions, 120; percentage required to pass, 75; total number examiners, held in Oklahoma City, March 13 regular school of practice, and licensed by written examination.

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Long, Wendell M.	1899	Caddo, Okla.	Harvard	1926	Oklahoma City
Batchelor, John J.	1895	Judea, Scotland	Yale	1924	Oklahoma City
Woodard, Julius Harold	1900	Lancaster, Mo.	Washington Univ.	1925	Picher, Okla.
Adams, Edward	1874	Mayfield, Ky.	Ky. School Med.	1904	Paducah, Ky.
Baker, Forrest Pitt	1889	Hot Springs, Ark.	Univer. of Arkansas	1912	Talihina, Okla.
Flack, Frank L.	1888	Longton, Kan.	Univ. of Kansas	1912	Coffeyville, Kan.
Grant, Lucile Ruffe	1895	AnSable, Mich.	Univ. of Michigan	1923	Sand Springs, Okla.
Britt, Henry Augusta	1879	Mississippi	Col. P&S Little Rock	1911	Seminole, Okla.
Grimes, John Philemon	1900	Dawson, Ga.	Emory Univ.	1924	Wewoka, Okla.
Hunter, William Lester	1872	Greenville, W. Va.	College of Virginia	1900	Seminole, Okla.
McGuire, Harry J.	1900	Westport, Wis.	Rush Med. College	1926	Chicago, Ill.
Ogg, Francis Willard	1894	Douglass, Kan.	Univ. of Kansas	1920	Osborne, Kan.
Richardson, Robert W.	1871	Okalona, Ark.	Under-graduate		Comanche, Okla.
Dunlap, W. S. (col.)	1874	Bellefontaine, Miss.	Meharry Med.	1902	Wewoka, Okla.
Crockett, Chas. S.	1878	Ozark, Ark.			Lincoln, Ark.
Patterson, James L.	1884	Dekalb, Mo.	Ensworth Med.	1906	Duncan, Okla.
Pope, H. P.	1882	Texas			Asher, Okla.
Wilson, Clarence Erroll	1887	Marcus, Iowa	Univ. of Iowa	1910	Boise City, Okla.
Chesnut, Wylie G.	1904	Salem, Ark.	Univ. of Ark.	1927	Oklahoma City
Foster, Edward Wendell	1894	Mt. Vernon, Mo.	Harvard Med.	1924	Tulsa, Okla.
McCarthy, Alphonsus M.		Greeley, Neb.	Creighton Med.	1927	Oklahoma City
Moore, Maurice B. (col.)	1901	Camden, N. J.	Howard Univ. Med.	1927	Oklahoma City
Ringrose, Ranson Francis	1900	Chicago, Ill.	Univ. Iowa Med.	1927	Oklahoma City
Raff, David	1903	Montreal, Can.	McGill Uv. Montreal	1927	Oklahoma City
Raff, Joseph Samuel	1902	Montreal, Can.	McGill Uv. Montreal	1927	Oklahoma City
Snow, James Byron	1903	Quitman, Texas.	Univ. of Texas Med	1926	Oklahoma City
Webster, William Welsh	1903	Wray, Colo.	Univ of Neb. Med.	1928	Tulsa, Okla.
Underwood, David J., Jr.	1898		Northwestern	1926	Tulsa, Okla.
Auwers, Frederick Jacob	1892	Kalamazoo, Mich.	Hahneman Med. Col	1915	Blackwell, Okla.

## PROGRAM

### THIRTY-SIXTH ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, MAY 17-18-19, 1928

*Place*—Akdar Temple, 4th and Denver.

*Telephones*—3-0342 and 2-8035.

*Registration* — Physicians, resident of Oklahoma, must be in good standing for 1928, that is, they must have issued to them certificate of membership for this year. Registration will be made from a roster of members at the Registration desks in the Exhibit Hall, second floor Akdar Temple, which roster is made up from the 1928 remittance sheets as filed by county secretaries. Members not holding certificates should at once consult their county secretaries and see that their record is cleared.

*Delegates*—Should present their credentials to the Credentials Committee, as soon as possible after arrival in order to facilitate the meeting of the House of Delegates.

*Papers*—Are the sole property of this Association, and upon reading should be taken up by the Section Officer; under no circumstances should these papers be carried away. Much loss of time as well as much unnecessary correspondence will be prevented if the papers are prepared exactly in the following manner: Title, author, name and address, section in which read and date of reading. Before final publication, printer's proof will be sent each author for correction. All papers should be typewritten, double spaced, and prepared in duplicate. Those designated to open discussion should have a copy of such paper or synopsis of its contents.

*The Council*—Will meet at 8:00 P. M. May 16, Hotel Mayo. All other meetings will be on call of the President. All matters pertaining to business of the Association should be presented to the Council.

*The House of Delegates*—Will meet in Akdar Temple, at 10:00 A. M., May 17. Delegates must have their credentials in the hands of the Credentials Committee before being seated.

*House of Delegates*—Will vote upon the proposed Constitution and By-Laws. The House of Delegates will meet at 8:30 A.

M., May 18, Akdar Temple. The first order of business will be the annual election of officers and the completion of such business as may come before it.

*The General Meeting*—Will be held at 8:00 P. M., May 17, Akdar Temple Theatre.

*Scientific Sections*—All Scientific Sections, except Eye, Ear, Nose and Throat, which will meet 9:00 A. M., May 18, will begin their deliberations at 2:00 P. M., May 17, and continue their work, except for recessing, until the programs are completed. Papers to be read will be called in the order they appear upon the program, and if not offered will drop to the bottom, except the Section may vote to alter the rule. Section officers should be elected at the end of the first meeting rather than at the end of the Section work.

*Clinics*—Will be held on each morning of the meeting, schedules will be obtainable at the Registration booth.

*Moving Picture Films*—Interesting moving picture films on "The Diagnosis and Treatment of Infections of the Hand" will be shown by the Extension Department of the State University. The time of these will be announced in the various sections.

*Women's Auxiliary*—Will meet May 18, 10:00 A. M., in Assembly Room, Medical Arts Building.

*Golf*—Doctors' tournament will be played May 17th. Those wishing to enter this tournament will communicate in advance with Dr. J. C. Peden, 611 Medical Arts Building., Tulsa, giving their club handicap. Ground privileges are extended to all visiting physicians by the Tulsa Country, Oakhurst Country and Indian Hills Country clubs.

*The President's Reception and Dance*—Will be held 8:30 P. M., May 18, at the Hotel Mayo.

*Luncheons, Dinners*—The Tulsa Academy of Ophthalmology and Oto-Laryngology will give a luncheon at the Tulsa Club, Friday noon, May 18, for the visiting Eye, Ear, Nose and Throat men.

*Medical Reserve Officers Banquet—*

Will be held at 6:30 P. M., May 18, Hotel Mayo. Any member attending the Session is eligible. Tickets for this function will be obtainable by communicating with Dr. Paul R. Brown, Medical Arts Building, Tulsa, and should be arranged for well in advance.

A luncheon for all members of Phi-Chi medical fraternity will be held on Friday, May 18th, at 1 o'clock, Mayo Hotel. Get your reservations at Registration desk, Dr. C. D. F. O'Hern, Chairman.

*Hotels*—Hotel rates in Tulsa for State Meeting: Hotel Mayo, general headquarters, single, \$3.50 to \$7.00, double \$5.00 to \$10.00; Hotel Tulsa, single, \$3.00 to \$5.00 double, \$4.00 to \$7.00; Hotel Ketchum, \$2.50 to \$7.00; Hotel Wells, \$2.50 to \$5.00; Hotel Densmore, \$1.50 to \$4.00. Reservations should be made at once. Address: Dr. C. T. Hendershot, Chairman Hotels and Registration, 507 Medical Arts Building, Tulsa.

The papers of Drs. W. D. Haggard, Surgical Section; Wm. F. Braasch and John R. Caulk, Urological Section, will be read before a joint meeting of the sections on Surgery, Gynecology and the section on Urology and Syphilology. The time will be announced by sections concerned.

*Tulsa County Medical Society*, through its President, Dr. Wm. J. Trainor, has named the following committee for execution of the meeting:

General Chairman—Dr. Ralph V. Smith.

Committee on Exhibits—Dr. Chas. D. Haralson.

Committee on Finance—Dr. Roy Dunlap.

Committee on Entertainment—Dr. Fred Y. Cronk.

Committee—Hotel and Badges—Dr. C. T. Hendershot.

Committee on Clinics—Dr. H. D. Murdock.

Reserve Officers Banquet—Drs. Paul R. Brown, P. P. Nesbitt, Ralph V. Smith.

Women's Auxiliary—Mesdames H. D. Murdock, Fred Y. Cronk, W. J. Trainor and C. T. Hendershot.

## PROGRAM, GENERAL MEETING

Akdar Temple

May 17, 8:00 P. M.

Dr. Ralph V. Smith, General Chairman,  
Presiding

*Music.*

*Invocation*—REV. GEO. O. NICHOLS, D.D.,  
Pastor College Presbyterian Church.

*Address of Welcome*—DR. JOHN D. FINLAYSON, D.D., President, University of Tulsa.

*Response*—DR. ARTHUR W. WHITE, Oklahoma City.

*Music.*

*Introduction of President* — DR. ELLIS LAMB, Clinton, by DR. J. S. FULTON, Atoka, Retiring President.

*President's Address.*

*Music.*

*Introduction of Visiting Guests*—DR. WM. D. HAGGARD, Nashville, ex-President of the American Medical Association; DR. CLIFTON F. MCCLINTIC, Detroit; DR. W. R. BATHURST, Little Rock; DR. RICHARD BOLT, Berkeley, Calif.; DR. WM. F. BRAASCH, Rochester; DR. JOHN R. CAULK, St. Louis; COL. H. H. RUTHERFORD, U. S. A., San Antonio; DR. JOHN O. McREYNOLDS, Dallas, Texas.

*Music.*

EYE, EAR, NOSE AND THROAT  
9:00 A. M., May 18th

DR. A. C. MCFARLING, Chairman, Shawnee

DR. F. V. VIEREGG, Secretary, Oklahoma City.

Chairman's Address.

*"Some Observations on Chronic Otorrhea"*  
DR. A. C. MCFARLING, Chairman, Shawnee.

*"Foreign Body in the Air Passages"*—DR. J. C. BRASWELL, Tulsa.  
Discussed by DR. A. L. GUTHRIE, Oklahoma City.

*"My Experience With Laryngitis in the Tuberculous"* — DR. FRANK RAY VIEREGG, Clinton.  
Discussed by DR. H. P. PRICE, Tulsa.

*"Aseptic Thrombosis of the Cavernous Sinus"*—DR. H. C. TODD, Oklahoma City.

Discussed by DR. J. C. McDONALD, Oklahoma City.

*"Foreign Bodies in the Vitreous"*—DR. E. S. FERGUSON, Oklahoma City.

Discussed by DR. M. K. THOMPSON, Muskogee.

*"Focal Infection Resulting From Para Nasal Sinusitis"* — DR. A. S. PIPER, Enid.

Discussed by DR. D. D. McHENRY, Oklahoma City.

*"Evisceration With Gold Ball Implantation"*—DR. W. A. HUBER, Tulsa.

Discussed by DR. R. W. DUNLAP, Tulsa.

*"Treatment of the Abnormalities of the Ocular Muscles"*—DR. C. B. BARKER, Guthrie.

Discussed by DR. M. K. THOMPSON, Muskogee.

*"Chronic Purulent Otitis Media; Combined Treatment"*—DR. I. D. WALKER, Blackwell.

Discussed by DR. C. B. BARKER, Guthrie.

*"Trachoma—Summary of My Experience in the Medical Treatment and Clinical Cure of Trachoma Before Cicatricial Stage"*—DR. MARTIN RUST, Pawhuska.

Discussed by DR. A. W. ROTH, Tulsa.

*"Eye Cases From Oral Sepsis"*—DR. J. R. WALKER, Enid.

Discussed by DR. A. S. PIPER, Enid.

*"Treatment of Purulent Meningitis"*—DR. W. E. DIXON, Oklahoma City.

#### —O— SURGERY AND GYNECOLOGY

8:30 A. M., MAY 17

DR. L. M. SACKETT, Chairman, Oklahoma City.

DR. SAM H. RITZHAUPT, Secretary, Guthrie.

*"The Acute Abdomen"*—DR. V. C. TISDAL, Elk City.

Discussed by DR. McLAIN ROGERS, Clinton.

*"Surgical Treatment of Gonorrheal Salpingitis"*—DR. F. A. HUDSON, Enid.

Discussed by DR. JOHN F. KUHN, Oklahoma City.

*"The Deformed Hand and Its Reconstruction"*—DR. CURT VON WEDEL, Oklahoma City.

Discussed by DR. FRED GLASS, Tulsa.

*"Congenital Pyloric Stenosis With Special Reference to Surgical Treatment"*—

DR. B. F. COLLINS, Claremore.

Discussed by DR. R. M. CHURCH, Stillwater and DR. A. D. JENNINGS, Chelsea.

*"The Treatment of General Peritonitis"*—

DR. J. HUTCHINGS WHITE, Muskogee.

Discussed by DR. I. B. OLDHAM, Muskogee and DR. C. D. O'HERN, Tulsa.

*"Malignant Condition of the Female Pelvis"*—DR. L. A. HAHN, Guthrie.

Discussed by DR. L. J. STARRY, Oklahoma City.

*"Pelvic Varicocele in the Female With Symptoms and Treatment"*—DR. A. W. PIGFORD, Tulsa.

Discussed by DR. E. E. RICE, Shawnee.

*"Cancer of the Rectum—Radical and Palliative Operations"* — DR. RAYMOND L. MURDOCK, Oklahoma City.

Discussed by DR. L. S. WILLOUR, McAlester.

*"Gall Bladder Visualization"* — DR. PAT FITE, Muskogee.

Discussed by DR. C. A. THOMPSON and S. D. NEELY, Muskogee.

*"Some Anemias Cured by Splenectomy"*—

DR. W. D. HAGGARD, Nashville, Tenn.

Discussed by DR. LEROY LONG and LEA RIELEY, Oklahoma City.

*"The Clinical Aspects of the Transport Mechanism of the Alimentary Tract"*

—DR. C. F. McCLINTIC, Detroit, Mich.

*"Some Points in the Use of Local Anesthesia"*—DR. A. S. RISSER, Blackwell.

Discussed by DR. R. V. SMITH, Tulsa.

*"Jejunostomy — Indications and Technique"* — DR. A. L. BLESCH, Oklahoma City.

Discussed by DR. T. M. ADERHOLD, El Reno.

*"Some Phases of the Treatment of Head Injuries"*—DR. J. F. PARK, Tulsa.

Discussed by DR. LEROY LONG, Oklahoma City.

*"Intramural Shortening of the Round Ligaments"*—DR. McLAIN ROGERS, Clinton.

Discussed by DR. R. M. HOWARD, Oklahoma City.

*"A Patient Or A Case"*—DR. F. S. CLINTON, Tulsa.

Discussed by DR. HORACE REED, Oklahoma City.

## OBSTETRICS AND PEDIATRICS

DR. GEO. R. OSBORN, Chairman, Tulsa.  
DR. CLARK H. HALL, Secretary, Oklahoma City.

Chairman's Address—"Standardization in Obstetrical Practice"—DR. GEO. R. OSBORN, Tulsa.

"Toxemias of Pregnancy" — DR. J. G. SMITH, Bartlesville.

Discussion opened by DR. W. A. DEAN, Tulsa, and continued by DR. A. C. HIRSHFIELD, Oklahoma City.

"Obstetrical Anesthesia and Analgesia"—DR. M. E. SIPPEL, Tulsa.

Discussion opened by DR. FLOYD J. BOLEND, Oklahoma City, and continued by DR. BERTHA MARGOLIN, Tulsa.

"Lactation and Puerperal Care of Breasts"—DR. D. D. ROBERTS, Enid.

Discussion opened by DR. R. M. ANDERSON, Shawnee, and continued by DR. T. C. LOWRY, Oklahoma City.

"Hemorrhages of Pregnancy"—DR. E. W. FOSTER, Tulsa.

Discussion opened by DR. E. P. ALLEN, Oklahoma City, and continued by DR. D. M. McDONALD, Tulsa.

"Recurrent Abortion"—DR. M. B. GLISMANN, Okmulgee.

Discussion opened by DR. W. W. WELLS, Oklahoma City, and continued by DR. DIVONIS WORTEN, Pawhuska.

"Some Practical Considerations of the Common Skin Conditions of Children"

—DR. WINFRED A. SHOWMAN, Tulsa.  
Discussion opened by DR. HUGH EVANS, Tulsa, and continued by DR. A. L. SOLOMAN, Oklahoma City.

"The Future of Obstetrics and Pediatrics in Oklahoma"—DR. LUCILE BLACHLY, Bureau of Maternity and Infancy.

Discussion opened by DR. C. V. RICE, Muskogee, and continued by DR. K. C. REECE, Tulsa, and DR. G. GARABEDIAN, Tulsa.

"The Management of Laryngeal Diphtheria"—DR. T. G. WAILS, Oklahoma City.

Discussion opened by DR. H. C. GRAHAM, Tulsa, and continued by DR. N. J. DIEFFENBACH, Tulsa.

"The Backward Child" (illustrated with lantern slides)—DR. HENRY H. TURNER, Oklahoma City.

Discussion opened by DR. C. E. WHITE, Muskogee, and continued by DR. M. J. SEARLE, Tulsa.

"Preventative Obstetrics and Pediatrics"

—DR. RICHARD A. BOLT, Professor of Pediatrics, University of California, Berkeley.

"Acute Upper Respiratory Conditions in Childhood"—DR. W. M. TAYLOR, Oklahoma City.

Discussion opened by DR. C. E. BRADLEY, Tulsa, and continued by DR. CLARK H. HALL, Oklahoma City.

"The Intraperitoneal Use of Citrated Blood in the Treatment of Bronchopneumonia"—DR. C. W. ARRENDELL, Ponca City.

Discussion opened by DR. CARROL M. POUNDERS, Oklahoma City, and continued by DR. F. L. UNDERWOOD, Tulsa, and DR. I. C. WOLFE, Muskogee.

## UROLOGY AND SYPHILOLOGY

ELIJAH S. SULLIVAN, Chairman, Oklahoma City.

BASIL A. HAYES, Secretary, Oklahoma City.

"The Relation of Urology to the Surgeon and General Practitioner"—DR. ELIJAH S. SULLIVAN, Chairman, Oklahoma City.

"Posterior Urethra"—DR. O. R. GREGG, Pawhuska.

Discussed by DR. ELLIS MOORE, Oklahoma City.

"Symposium—Tuberculosis of the Kidney" (Urologist)—DR. C. B. TAYLOR, Oklahoma City.

(Internist)—DR. PHIL McNEIL, Oklahoma City.

(Surgeon)—DR. LE ROY LONG, SR., Oklahoma City.

Discussion led by DR. E. L. COENHOUR, Tulsa.

"The Cautey Punch Operation"—DR. JOHN R. CAULK, St. Louis, Mo.

Discussion led by DR. FLOYD WARTERFIELD, Muskogee.

"Elusive Ulcer of the Bladder"—DR. JOHN Z. MRAZ, Oklahoma City.

Discussed by DR. HENRY S. BROWNE, Tulsa.

"Leukoplakia of the Trigone"—DR. HUBERT CALLAHAN, Tulsa.

Discussed by DR. J. H. HAYS, Enid.

"The Diagnosis of Ureteral Stricture"—DR. WM. F. BRAASCH, Mayo Foundation, Rochester, Minn.

Discussed by DR. W. J. WALLACE, Oklahoma City.

"The Penile Sore" — DR. GEO. BORECKY, Oklahoma City.

Discussed by DR. REX BOLEND, Oklahoma City.

"Acute Gonorrhea in the Female"—DR. J. H. HAYS, Enid.

Discussed by DR. FRANK J. BAUM, McAlester.

"Urologic Problems of the General Practitioner"—DR. S. DE PORTE, Ardmore.

Discussed by DR. JOHN Z. MRAZ, Oklahoma City.

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#### SECTION ON GENERAL MEDICINE, NEUROLOGY, PATHOLOGY AND BACTERIOLOGY

DR. W. S. MASON, Chairman, Claremore.

DR. E. K. WITCHER, Secretary, Tulsa.

Chairman's Address—"The History of the Code of Medical Ethics" — W. S. MASON, B.S., M.D., Claremore.

*Symposium-Pulmonary Tuberculosis—*

*Diagnosis*—DR. E. E. DARNELL, Clinton.

Discussed by DR. W. H. MYTINGER, Sulphur.

*Prognosis*—DR. C. E. BATES, Oklahoma City.

Discussed by DR. EMANUEL LEVY, Muskogee.

*Artificial Pneumothorax and Thoracoplasty*—DR. L. J. MOORMAN, Oklahoma City.

Discussed by DR. HORACE T. PRICE, Tulsa.

*Clinical Pathology* — DR. H. G. JETER, Oklahoma City.

Discussed by DR. RALPH E. MYERS, Oklahoma City.

"The Nature and Source of Bacteriophage and It's Relation to Immunity" — DR. GAYFREE ELLISON, Norman.

"Diseases Other Than Hay Fever and Asthma Due to Specific Sensitivity"

—DR. RAY M. BALYEAT, Oklahoma City  
Discussed by DR. JAMES STEVENSON, Tulsa.

"The Study of A Series of Gastro-intestinal Cases With Particular Reference As to Causes and Final Diagnosis"—

DR. C. J. FISHMAN, Oklahoma City.  
Discussed by DR. A. W. WHITE, Oklahoma City.

"The Differential Diagnosis Between Angina Pectoris and Coronary Infarct" DR. M. A. MORTENSEN, Battle Creek, Michigan.

Discussed by DR. W. J. TRAINOR, Tulsa.  
and DR. A. B. CHASE, Oklahoma City.

"Criminal Responsibility of the Mentally Ill." — DR. M. S. GREGORY, Oklahoma City.

Discussed by DR. A. L. STOCKS, Muskogee.

"Industrial Psychoneurosis" — DR. A. D. YOUNG, Oklahoma City.

Discussed by DR. CHAS. RAYBURN, Norman.

"Tuluremia—A Report of Three Cases"—

(a) DR. L. R. WILHITE, Perkins.

(b) DR. R. D. MORRIS, Stuart.

"Cutaneous Aspects of Systemic Disease"

DR. JAMES STEVENSON, Tulsa.

Discussed by DR. C. P. BONDURANT, Oklahoma City.

"Malta Fever—A Report of Three Cases"

DR. SAMUEL GOODMAN and DR. D. O. SMITH, Tulsa.

Discussed by DR. T. H. MCCARLEY, McAlester.

"The Possibilities in Rural Practice"—DR. R. R. SIGLER, Brame.

"Visualization of Gall Bladder and Diagnosis of Gall Bladder Conditions From an X-Ray and Laboratory Point of View"—DR. MORRIS LEVINE, Tulsa.

Discussed by DR. J. E. HEATLEY, Oklahoma City.

"The Necessity for Complete Routine Examination"—DR. W. J. BRYAN, Tulsa.

Discussed by DR. J. C. PEDEN, Tulsa.

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#### PROGRAM OF WOMEN'S AUXILIARY

Session, Friday, May 18, 10 A. M.  
1928, Assembly Room, Medical  
Arts Building.

MRS. EDWARD P. ALLEN, President, Presiding.

1. Song—"America."

2. Invocation.

3. Welcome Address—Mrs. H. D. Murdock, Tulsa.

4. Response—Mrs. J. S. Fulton, Atoka.

5. President's Address—Mrs. Edward P. Allen, Oklahoma City.

6. Reports of State Officers—Secretary, Mrs. A. S. Risser, Blackwell; Treasurer, Mrs. C. A. Thompson, Muskogee.
7. Reports of County Delegates.
8. Election of Officers and Delegates to the American Medical Association Auxiliary, Minneapolis, Minnesota, June 11 to 15, 1928.

#### Luncheon

1. Round Table — "*Experiences of the Doctor's Wife*."—Leader, Mrs. W. K. West, Oklahoma City.
2. Report of Delegates to American Medical Association Auxiliary, Washington, D. C., 1927—Mrs. J. M. Byrum, Shawnee; Mrs. M. M. Roland, Oklahoma City.
3. Reading—"The Doctor's Wife"—By Tressa M. Scott—Mrs. T. D. Roland, Shawnee.
4. Address—Mrs. J. O. McReynolds, Dallas, Texas, President American Medical Association Auxiliary.

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#### NEW ABBOTT—D.R.L.—MILLIKEN PRICE LIST



One of the most handsome and modern price lists ever published by a pharmaceutical house is now being distributed by the Abbott Laboratories.

This list, beautifully designed and printed in attractive colors, contains 176 pages. Included in this price list, will be found only the principal products of the Abbott Laboratories and the Dermatologi-

cal Research Laboratories, but also a list of the most important preparations of the house of John T. Milliken & Co. of St. Louis, which was acquired by The Abbott Laboratories on January 3, 1928. With the addition of this line The Abbott Laboratories is now prepared to supply standard pharmaceuticals of the finest quality, as well as the fine chemical and other specialties which has been the distinguishing feature of this house.

The great war led to a radical change in The Abbott Laboratories. For some years prior to 1916, a limited amount of research had been conducted, and a few chemical products were manufactured in its Ravenswood plant. The nucleus of a real chemical staff had been assembled. In

1916, Dr. H. D. Dakin, an English chemist, co-operating with Dr. Alexis Carrel, in France, in the study of septic wounds, discovered the remarkable germicidal power of chloramines. His paper was published in the British Medical Journal. This led to the manufacture of Chlorazene by the Abbott Laboratories—the first firm to produce and introduce this substance in America. Soon after followed Dichloramine—T and Chlorcosane, also developed by Doctor Dakin. These three substances are now official.

Since then The Abbott Laboratories has taken front rank in research in synthetic medicinals. When we entered the war, it was assigned the task of producing some of the more important medicinals heretofore made only in Germany, such as Barbitol, Procaine and Cinchophen. Soon it added Anesthesin, Acriflavine, Neutral Acriflavine and Neocinchophen. From the very beginning of its venture into the chemical field, original research, looking to the discovery of new and valuable products, has been part of the program of the house, and the result is the introduction of a number of valuable new synthetic drugs, among them Butyn, Butesin and Butesin Picrate, Neonol and Metaphen.

In the hands of The Abbott Laboratories and under the direction of Dr. George W. Raiziss, the "D.R.L." has made steady progress, not only in the production of large quantities of the arspenamines of constantly improving quality; but also in fine research leading to the creation of valuable new synthetics, such as Metaphen, Bismarsen and Salihexin.

Still another forward step was the moving of The Abbott Laboratories from Ravenswood, in Chicago, to the splendid new plant, consisting of a group of fourteen buildings on a tract of twenty-five acres, located at North Chicago, Illinois.

The latest step forward is the acquisition of Milliken, already referred to. Milliken products have an excellent reputation, which will be enhanced by the Abbott policy of backing its preparations by constructive research, looking toward constant improvement—the abandonment of things that are weak or useless, and insistence upon bringing the line into accord with the changing spirit of the times. Abbott gives this assurance to its friends—that in broadening the base upon which its business structure rests, by the addition of a general line, it is going forward, not backward. The fundamental policies of the house will be adhered to for the evolution of better as well as bigger things.

The Abbott Laboratories is built upon research, and greater pride is taken in the scientific achievements of the house than in its financial success. As stated by the President of the firm, Alfred S. Burdick, M.D., "We believe that the future of this institution must rest upon sound scientific work. Our policy, therefore, may be epitomized as follows:

1. Research is fundamental and vital. Without it real progress is impossible—in spite of occasional evanescent success.

2. Research in a business organization should be co-ordinated with research in our universities, hospitals and other institutions.

3. Specialize. This means the direction of intense effort into certain important channels. The result should be the evolution of real specialties of outstanding merit, which will achieve and deserve success.

(Continued on page 136)

## UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.  
1010 Medical Arts Building, Oklahoma City,

### CLIPPINGS FROM THE UROLOGIC AND CUTANEOUS REVIEW

A rusty office is a pretty sure sign of rusty professional methods.

A pain at first suggestive of an upper urinary tract involvement may be due to basal pleurisy.

A urological examination can not be considered complete without a catheterization of the ejaculatory ducts.

Perforation of the nasal septum is commonly syphilitic in origin, but it can also be caused by tuberculosis.

Atrophy of the matrix of one or more nails in childhood is a very, very suggestive sign of late congenital syphilis.

Renal function tests are not in themselves infallible yardsticks, but must be correlated with other clinical data.

No kidney is safe so long as there is a stone in the ureter even if the stone seems to be giving rise to no immediate symptoms.

It is an excellent habit for a surgeon to inspect his hands the first thing every morning for the presence of minute fissures and follicular infections.

A psoriasiform lesion in the palm of one hand may be syphilitic in origin, but if on the palms of both hands, a syphilitic origin is very improbable.

In all untreated, or imperfectly treated cases of syphilis in the early late stage it should be part of the routine examination to make a fluoroscopic examination of the aorta for beginning aneurysm.

If you have to get sexual history do not continue to beat around the bush, but after a decent introduction of the subject be direct, dignified and considerate of the patient's feelings, but nevertheless pointed and insistent in your necessary inquiries.

The following is a Senior Medical Student, B. H. Britton's answer to the final examination question "What is the standard treatment for syphilis?" I am quoting it verbatim because it is such a comprehensive answer on the subject and written in the words of the medical student who will soon take his place in the ranks of M.D.'s that I believe it worth while to re-print in this column:

"It is upon this question that I particularly wish to lay stress. There is NO STANDARD treatment for syphilis. It is treated in cycles to the point of saturation, and each case is treated individually. It is upon the so-called standard treatment that the majority of our cases of general Paresis develop. It is therefore obvious that we cannot have a standard treatment for syphilis. It must be varied according to the individual. Some will stand more intensive treatment while others cannot tolerate it. Some will respond very fast to a mild

treatment while others will respond very slowly to a very intensive treatment. We must therefore govern our treatment by the manifestations of the progress of the disease and the effect of the treatment upon the clinical actions of the disease. The drugs accordingly must be varied. Some respond to one of the arsenicals while others will not. Some respond beautifully to Mercury while others to Bismuth. Some will tolerate more of the one than of the other. The KI which is given in large doses will be tolerated in large quantities by some while in others it will be tolerated only in minimal quantities. Therefore we cannot lay too much stress on treating the individual rather than saying we have a certain routine which we must follow in all cases. What then is the treatment for syphilis? And what are the merits of the individual drugs used? The treatment for syphilis may be divided into three classes, i.e. broadly speaking: 1, Intensive; 2, Mildly intensive; 3, Slow."

"First we shall discuss the intensive treatment. It should be used in cases of early appearance of Chancre, in early recognition, in secondary stages, and in cases where for instance a surgeon cuts his finger with a knife which has been used on a syphilitic. In all cases however, whether it be mild, intensive, or mildly intensive, we must remember to treat in cycles to the point of saturation. Whether it takes 5-7-9 or 30 doses we must reach the saturation point. Given a case in a healthy individual. Give him .45 Monday, .6 Wednesday, .9 Saturday, .9 Tuesday, .9 Saturday, then go ahead at from five to seven day intervals until you have him saturated which is evidenced by the patient feeling tired, catching cold easily, general malaise and emotional instability. Therefore the first cycle in the treatment is to the saturation point. The above figures are using Neo-salvarsan. Mercury in increasing doses from 1-8 to 1-4 should be crowded during this time."

"After this saturation point is reached, as said before whether it be after the administration of five or twenty doses a rest of thirty days is given. Ten days before the rest period is over the KI is started. It is usually satisfactory to begin with 15 Gtts T.I.D. in one glass of water before meals. In this way it will generally always be retained. Increase this one drop for each dose daily until the patient's tolerance is reached. At the end of this thirty day rest period another cycle is started. The Neo may have to be decreased somewhat as the patient may not be able to tolerate as large doses as in the previous cycle. After the saturation point is reached the third cycle is started. During this period Bismuth is used instead of Mercury, great care being taken to watch for saturation signs regarding the Bismuth which is evidenced by blue line on the gums, salivation and kidney disturbances. After the third course it is a case of watchful waiting and keeping in touch with the patient. After sixty to one hundred twenty days a Wassermann should be run and should be checked every six months thereafter."

"Now if we have an emaciated patient, poorly nourished, with perhaps some constitutional disease, or an old patient, we should use a mildly intensive treatment. We must approach him cautiously. We here as before treat in cycles to point of saturation but watch heart and kidneys very closely. We may not be able to cure him, but only prolong his life by keeping a few jumps ahead of the Spirochoete. In connection with children it is better to give more arsenic and less mercury. If we pick up the case in a routine examination we

should start the Iodides with the first course. If Iritis is present we should use Bismuth and Iodides until the acute symptoms subside.

"If we have an old 'Shot' individual, we should start the KI and Bismuth first and after this has been going for some time we can start minute doses of Arsenic, but we must be very acute in the watching of the patients as they are easily put out of their misery."

"Lastly in the case of Tabes, the modified Swift Ellis method is mostly used but some workers claim that mercurialized serum is more satisfactory than Swift Ellis, it being ready prepared media containing a definite amount of Mercury and injected into the spinal canal with ordinary lumbar technique. This method combined with the vigorous general treatment promises the best known results for tabes."

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### EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.  
726 Mayo Bldg., Tulsa

The Treatment of the Commoner Syphilitic Lesions of the Eye., Hopkins, J. G. Arch. Ophth., 1927, LVI, 543.

The arsphenamines are the most active spirochaetocides and clinically the most effective. Bismuth and mercury are also of undoubted value and should be used in conjunction with the arsphenamines. In early cases, the treatment should be intensive; the administration of drugs should be continuous and the treatment prolonged. In late cases, the treatment should be begun with small doses but ultimately should follow the plan for the early cases. If a serological cure becomes impossible, the treatment must be planned to prevent relapse, one course a year being given for an indefinite period. Intraspinial treatment should be reserved for cases which do not respond satisfactorily to the intravenous method. Except in paresis, the malaria treatment must be regarded as experimental.

In secondary syphilis, iritis is the most common eye lesion. It indicates a systemic infection at a stage in which it may be completely eliminated by proper therapy. In interstitial keratitis, pessimism need not prevail if the arsphenamines, mercury, bismuth, and the iodides are pushed to the limit. Arsphenamine can have no effect on the repair of the cornea, but in most cases will arrest the progress of the inflammatory process. In the optic atrophy due to basilar meningitis the results are good, but in that associated with tabes they are very poor. One or two injections of mercury or bismuth should be given first and arsphenamine begun with small doses by the Swift-Ellis procedure. It is fairly well established that in the majority of cases receiving intensive treatment early in the disease, the symptoms disappear, the serum reactions become and remain negative, and no further ocular symptoms develop.

The Relation of Cupping of the Optic Disk to the Visual Fields in Glaucoma, Wuerdemann, H. V.: Am. J. Ophth., 1927, 3 s. x., 831.

The author states that he now sees a greater number of cases of glaucoma than formerly and is especially interested in the relation of the changes in the optic disk to those of the visual field and the relation of the degree and char-

acter of cupping of the disk to the sectoral changes in central and peripheral vision.

The weak spots of the globe is the foramen in the sclera and choroid, and it is here in the nerve where signs of increased pressure appear. These signs vary according to the suddenness, severity, and periodicity or permanency of the pressure. Cupping of the disk is due to stretching of the lamina and atrophy of the nerve bundles in the distal end of the optic nerve. The temporal retina suffers first and most, the temporal capillary branches being more affected because of their length, but the main defects in the visual field are the results of atrophy of the nerve fibers going to that particular field. However, the field defects vary in each case according to which fibers are most involved, as is evident from the Ronne, Seidel, Bjerrum, and Elliott signs. The order of development of field defects is: (1) concentric contraction, (2) nasal sectoral deficiency, (3) enlargement of the blind spot and isolated pericentral scotomata, and (4) involvement of the papillomacular fibers with loss of central vision and blindness.

The color fields in glaucoma are relatively as large as those for white and form a diagnostic point of some importance since in other atrophic types the color fields are generally more affected than those for form.

Herpes Zoster Oticus., Stewart, J. P.: J. Laryngol. & Otol., 1927, XLII, 665.

The author reports a case of zona with a multiplicity of lesions involving primarily the vestibular ganglion on either side. It was assumed that, on the left side, the infection travelled up the large lymph spaces in the substance of the cochlear filament connecting the vestibular ganglion with the geniculate ganglion and probably extended downward along the chorda tympani, involving the lingual nerve. It is possible also that there was a primary infection of the gasserian ganglion.

The symptoms were blisters on the left border of the tongue, a slight loss of taste, fever, left-sided deafness, left-sided facial paralysis, and bilateral vestibular paralysis. All except the left-sided deafness cleared up.

Tissue Changes in the Nasal Mucosa; Preliminary Report., Finck, H. P.: Laryngoscope, 1927, xxxvii, 783.

In acute nasal congestion, microscopic examination of the nasal mucosa reveals oedema, an increase in the mononuclear cells, and a definite increase in the eosinophiles, but none of the classical signs of bacterial infection. In acute purulent rhinitis, the lymphocytes are markedly increased, but the eosinophiles and oedema are decreased. Chronic purulent rhinitis shows tissue hypertrophy and an increase of lymphoid elements and plasma cells. In these purulent conditions it is usually difficult to demonstrate bacteria in the tissues.

Vasomotor rhinitis is characterized by oedema and a marked increase in the eosinophiles. In nasal polyps, various cellular types are found, depending upon the character of a concomitant nasal infection. Cystic polypoid formations include mucocoeles, mesothelial cysts, and cystic degeneration of polyps. The tissues adjacent to such formations show lymphocytes, plasma cells, and connective tissue changes. In atrophic conditions

of the nasal mucosa there is a definite reduction or disappearance of lymphoid elements, eosinophiles, and other infiltrating cells.

In the majority of tissue changes the significant cells are the lymphocytes, plasma cells, and eosinophiles. Lymphocytes and plasma cells prevail in purulent rhinitis, and eosinophiles in vasomotor and anaphylactic conditions.

### BACTERIOLOGY, PATHOLOGY and PUBLIC HEALTH

Edited by Drs. L. A. Turley and Gayfree  
Ellison, Norman, Oklahoma

**Results of Removal of Dental Focal Infections.**  
R. J. DeMotte, M.D. and Ernest Goldhorn, D. D.  
S. Journal of Industrial Hygiene, Jan., 1925,  
Vol. IX, No. 1.

There is scarcely a tissue or part of the body which has not been found diseased or damaged through dental focal infections. These infections have been the cause of untold sufferings and disability.

It is difficult to convince the average patient that removal of infected teeth which are giving no pain will stop the pains of neuritis or arthritis in remote parts of the body. In spite of vigorous efforts to convince them, a large majority do not follow the advice given.

In reply to letters sent to patients, the following results were gathered. Of 185 patients, of which 78.1 per cent replied, 57.3 per cent were cured, 24.9 per cent relieved, 82.2 per cent cured and relieved, 17 per cent unrelieved. Among these 185 patients there were 36 who were suffering from Myositis, 50 from chronic arthritis, 43 from neuritis, 19 from chronic stomach trouble and 37 from various other chronic ailments for which no adequate cause other than infected teeth could be found.

Of the 17 percent which were unrelieved, 23 cases in which favorable results could not be expected due to obvious reasons. Thus 93.8 per cent were either cured or relieved, if these 23 cases dropped.

With this taken into consideration, a careful examination of patients should be made as to the teeth. Teeth that are infected should not be filled, but removed. And education of the profession and the laity is needed.

**Bacterium Melaninogenicum From Normal and Pathologic Tissues.** Kenneth L. Burdon. Journal of Infectious Diseases. Feb. 1928, Vol. 42. No. 2.

Oliver and Eherry, in a brief note, originally described and named the nonspore-bearing, black pigment producing anaerobic microorganisms, *Bacterium melaninogenicum*. They cultured it from the throat and elsewhere on human blood agar slants made anaerobic by the pyrogallic method, on which characteristic dark brown or black colonies became visible within one to two weeks. As the growth increases the hemoglobin throughout the agar slant disappears until finally the medium appears like a slant of plain agar.

These authors did not use plating methods for isolation and purification of their cultures and it seems probable from their description that they

did not obtain strictly pure cultures, according to the author, who states that growth of pure cultures is uncertain, slow, and usually meager. Hemolysis is slight, and the complete destruction of the hemoglobin throughout a slant or plate does not occur. In mixed cultures under anaerobic conditions growth on blood agar is rapid and luxuriant.

Cultures were made from the dental-gingival margin, and also from exposed surfaces of the gums, cheeks, and throat of 200 individuals. Many were cultured several times. Groups of 30 to 75 students and clinic patients were cultured at one time. Material from the gum margin was obtained by the use of a blunt needle with end bent at right angles, rather than a swab.

The bacterium was found in the mouths of all persons examined, localized chiefly in the dental-gingival margin. It was absent, or present in small numbers only, on exposed surfaces of the mouth or throat. It was found in considerable numbers in cultures from the fold between upper gum and roof of mouth posteriorly. Cultures from persons with gums and teeth in excellent condition, showed consistently very few of the pigmented bacteria, whereas cultures from individuals with comparatively poor dental conditions whose gum margins were dirty, blunted or loosened from the teeth, always revealed a large number.

Cultures from the pus expressed from gum pockets, or made by passing needles directly into inflamed tissues about the infected teeth, in pyorrhea cases, revealed the presence of the bacterium melaninogenicum in very great numbers. In all cases studied, the number of the organisms present was proportional to the stage of the disease, the advanced stages showing the bacterium in great numbers, the beginning stages in less numbers. In two cases which were treated and cured, the bacterium appeared only in normal amounts after the cure.

In four cases of acute Vincent's infection and 3 abscesses of teeth, the black growth was meager. In cultures from crypts of 16 pairs of excised tonsils an abundant black growth developed in each case. Cultures from sputum of 9 lung abscesses, 2 were negative and 7 were positive. From the male genitalia, 10 negative and 25 positive from 35 cultures. From the female genitalia, 32 negative and 105 positive.

The factor which appeared to affect directly and definitely the numbers of the organisms present was the degree of personal cleanliness of the patient.

**Summary and Discussion:** *Bacterium melaninogenicum* is a very small, nonspore bearing, gram-negative anaerobic diplococcobacillus. Its growth in pure culture is feeble, but it grows readily in very intimate mixture with other bacteria. They are found present on healthy mucous membranes. They probably have no primary etiological significance, acting as secondary invaders, but in many cases they constitute an important bacterial factor in diseases.

Schwarz and Dieckmann, found that puerperal fever of the type originating in all prob. autoinfection, and frequently involving the pigment producing organism, is extremely rare in the more cleanly patients and occurs most commonly in colored ward patients of the less clean type.

In conclusion, *Bacterium melaninogenicum* constantly inhabits healthy mucous membranes but

takes a prominent part in various pathologic processes.

**Moisture as an Etiologic Factor in Industrial Infections.** C. W. Goff, M.D. *Journal of Industrial Hygiene*, Jan. 1925, Vol. IX, No. 1.

This report demonstrates the increased incidence of infections of the hands and forearms of a group of textile operatives with relation to the presence of moisture as an important etiologic factor.

It is taken from the mills in which raw silk is handled. The groups studied, are ones whose hands are continually damp and often wet, and the ones that handle the silk in the first stages in which it is only slightly damp. The latter, group 1, suffered infections of the hands and forearms. These infections followed lacerations sustained during work. In the group, whose hands were continually wet, of forty-one operatives, there was a total of 151 injuries to the hands or forearms with 117 infections resulting, ranging in severity from simple infections or lacerations of the fingers to cellulitis of the hand, acute paronychia, and tenosynovitis of the forearm. Only five operatives had not sustained some form of infection. In a group between the first two, in which the hands and forearms were only slightly moist, of forty-four operatives, there was a total of sixty injuries with thirty-one infections of the hands and forearms.

Kenshaw, of the National Safety Council, from his experience believes that skin infection is similar departmental processes in woolen mill workers, "is due to a weakness on the part of the individual". He do doubt wishes to convey the thought that the "weakness" lies essentially in the skin exposed to the added moisture.

After eliminating the individual job hazard, the figures for the three groups studied show, that in the group where the hands were continually wet, 78 per cent of injuries infected, has by far the greatest proportion of infections of injuries to hands and forearms. The group in which the hands were only moist, 50 per cent, and the group where only moist a little of the time, 33 per cent.

The only variable factor of importance is the degree of moisture, of the material and the hands of the workers.

In conclusion, this study indicates that moisture must play a greater part than is generally realized in the production of infections. Its significance can readily be drawn from the severity of the infections found in the groups of operatives shown.

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
717 North Robinson St., Oklahoma City

**Conditions of the Bones, Joints, Muscles, Tendons, Etc.** Krasnobajev, T. P: *The Treatment of Acute Haematogenous Infectious Osteomyelitis* (Ueber Behandlung der akuten haematogen infektiösen Osteomyelitis). *Novyj chirurgiesceskij archiv*, 1925, VIII, 354.

At the seventeenth Russian Surgical Congress held in Leningrad in 1925, the author discussed the principles of the treatment of acute osteomyelitis and reviewed the results he had obtained in cases of this condition in the last twenty years.

The treatment should be as conservative and as simple as possible. In the acute initial stage, radical operative measures and general narcosis are contra-indicated. Operation must be limited to incision of the soft tissues to the periosteum under local anaesthesia. In severe septic cases this incision must be made before fluctuation is demonstrable. In mild cases, simple aspiration by puncture may be sufficient. Tamponade is contra-indicated, but occasionally drainage with counter-openings may be established for a short time. Following such treatment more extensive operative measures may be not only unnecessary but actually harmful.

Care must be taken to improve the general condition and to spare the tissues in the operative field. In epiphyseal osteomyelitis complicated by suppurative inflammation of the joints, more extensive operative measures are indicated. However, in the cases of small children, it may be necessary to restrict the treatment at first to simple aspirations. In cases in which the pus has broken through the capsule wall and has led to the formation of a phlegmon, arthrotomy should be done. Tamponade is contra-indicated. Resection is indicated in epiphyseal osteomyelitis only in cases of hip disease with gangrene and complete separation of the head of the femur. After the sepsis has subsided, early necrotomy with removal of all visible dead bone must be performed without waiting for the formation of an involucrum. The operative wound must then be sutured. If the proper post-operative care is given, amputation and exarticulation are rarely necessary.

The author reports his experience in 428 cases of acute osteomyelitis in children under 13 years of age. There were ninety-six deaths, a mortality of 22.4 per cent. The highest mortality, 22 per cent, was that of the group of 127 children under 2 years of age.

The osteomyelitis involved the thigh and leg in 148 cases (forty-eight deaths), the head of the femur in ten cases (one death), the ilium in twenty cases (eight deaths), the scapula in seventeen cases (recovery in all), and the epiphyses in 127 cases. Epiphyseal osteomyelitis involved the hip joint in sixty nine cases (sixteen deaths), the knee joint in thirty-five cases (two deaths), the shoulder in ten cases (two deaths), the ankle in nine cases (no deaths), the elbow in two cases (one death), and the hand in one case (recovery). In the one case of involvement of the tibial epiphysis without involvement of the knee, recovery resulted.

Aspiration of pus by puncture was done in nineteen cases (chiefly cases of hip and knee involvement) with one death. Incision or arthrotomy were done in ninety-one cases, with fifteen deaths. Resection of the hip joint was done in eleven cases, with five deaths.

Of sixty-four cases of epiphyseal osteomyelitis in which bacteriological examinations were made cocci in chains were found in thirty-six (streptococci in sixteen cases and diplococci in twenty). In this group the mortality was 16 per cent, whereas in twenty-seven cases of spathyllococcal infection, the mortality was only 10.7 per cent.

**Fractures and Dislocations.** Henderson, M. S.: *The Cause and Treatment of Ununited Fractures*. *South. M. J.*, 1926, XIX, 746.

It is difficult to assign a definite cause for delayed union or non-union in any given case of un-

united fracture. One or more factors may be responsible, such as devitalizing trauma, the interposition of muscle or fascia with extensive overriding, inadequate reduction, improper apposition of fragments, interference with the blood supply, and too early weight bearing or resumption of function.

The work of Robinson and his coworkers appears to have sufficient basis on which to build a reasonable hypothesis to explain the apparent interference with the normal processes of ossification. This theory is based on the presence in the osteoblasts and hypertrophic cartilage cells of an enzyme (phosphoric esterase) which acts on the phosphoric esters of the blood. It has been shown that amino acids such as would be formed by autolysis of dead tissue or haematomata decalcify the bone appreciably and thus tend to reduce the amount of the enzyme present. The enzyme is inhibited in its action by an acid medium. The fact that this unfavorable influence on ossification does not occur in all cases of fracture is not proof that it cannot happen in some.

If this careful experimental work can be accepted, fractures produced by severe injuries with consequent serious trauma to the soft parts should be regarded with suspicion. It is reasonable to argue that such fractures should be opened and cleaned of the damaged tissue and haematomata, accurate reduction should be obtained, and a dry field secured.

The massive bone graft is the method of choice in case of nonunion and leads to a higher percentage of cures than any other method. In delayed union, good results are obtained in a large percentage of cases by any method which exposes the fragments, realigns them, and maintains good apposition.

### IS MEDICAL EDUCATION OVER-STANDARDIZED?

Among numerous criticisms of medical education in recent years is the claim that it is over-standardized. Twenty-five years ago less than 30 of the 162 medical schools then existing required even a high school education for admission, and only two had any requirement of college work. At that time also less than a third of the institutions had a course of instruction worthy of being called a curriculum. The present situation, in brief, represents a change from a complete absence of entrance requirements in the majority of medical schools to a minimum of two years of college work, and from no curriculum to what, under the circumstances, must be, to say the least, an improvement. The greatest difficulty in this rapid development arose through the inadequate supply of properly qualified teachers to meet the greatly increased demand, particularly for the laboratory sciences. Through the scarcity of physicians who were also qualified teachers, the schools were forced to accept doctors of philosophy, or even masters or bachelors of arts or science with qualifications as nearly approaching the requirements as possible. Under such a handicap, the present high stage of development of instruction in our medical schools is remarkable. But the faults in medical instructions were not restricted to the laboratory departments: many deficiencies have existed in the teaching of the clinical subjects. Not until after the advances

in entrance requirements and in instructions in the laboratory sciences did the quality of instructions in the clinical departments undergo an increasingly rapid development. Only during the last decade in many of the medical schools were patients in dispensaries and hospitals more generally and systematically of aid for teaching purposes, and only recently have students been given the opportunity in small sections and as clinical clerks to write histories, make physical examinations, suggest treatment and note the clinical progress of diseases. A minority of our medical schools, it is true, have always been fairly well organized and equipped and have rapidly advanced. In the majority, however, the change of instruction has been from an inferior type to what now is at least a logical sequence of subjects and a fairly well arranged routine of instruction. Perhaps it is complimentary to state that the course of instruction has reached a stage at which a criticism of "overstandardization" can be made. The requirement of only two years of college work for admission, the present four-year medical curriculum and a year of intern training cannot be termed extravagant, as they represent the minimum standard of a physician's education in all the leading countries of the world. The faults of underdevelopment will probably be corrected in time.—*Jour. A. M. A.*, April 30, 1927.

### DRESSINGS FOR BURNS

Harry S. Fist, Los Angeles (*Journal A. M. A.*, May 7, 1927), says that a dressing that presents several advantages may be prepared by dipping gauze into a hot, dilute, aqueous solution of pure gelatin, drying it, and then treating with solution of formaldehyde U. S. P. of half strength, and finally washing and drying. The result is a gauze that is unaffected by moisture; it will not stick to a granulating surface, and may be kept in a warm climate or sterilized in an autoclave. When this prepared gauze has been used as a dressing, granulation has proceeded with great rapidity. The gauze, when dry, is slightly stiffer than paraffined gauze but softens somewhat when moistened. If well diluted gelatin solution is used, the dressing is not too stiff for application to raw surfaces. Before the gauze is applied the surface should be well cleansed and then dried, preferably by means of hot air. The dressing should be removed daily, the wound cleansed and dried, and a new dressing applied. Pure gelatin is easily obtainable and should always be used.

### NEW ABBOTT—D.R.L.—MILLIKEN PRICE LIST

(Continued from page 131)

4. Anticipate the currents of thought by watching the trends. Never in the history of medicine has there been such a ferment of intellectual activity. Look ahead. Encourage those about you to do this.

5. Work with others—and particularly with the leaders in the medical profession and the industry. Don't resent adverse criticism. If it is sound, bring yourself into line.

6. Advertise. If a product possesses outstanding merit, don't grudge the money necessary to bring it to the attention of prospective users."

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# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLA., JUNE, 1928

NUMBER 6

## PRESIDENT'S ADDRESS\* Thirty-sixth Annual Session

ELLIS LAMB, M. D.  
CLINTON, OKLA.

*Mr. Chairman, Members of the Association and Gentlemen:*

It is a pleasure to have the honor and privilege of coming before you as President of the Oklahoma State Medical Association. I have not the language to express my appreciation of the honor and confidence which you have bestowed upon me, and will content myself by endeavoring to work and deport myself in such a way as to help make this a bigger and better association.

I have been a member of this association, and have attended its meetings for twenty years, and during this time have witnessed its growth from a comparatively small organization to what we have today—one of the outstanding organizations of the Southwest.

It is my desire to see this association become one of the best of any of the States, and we can make it such and enjoy its benefits if we will but cooperate and work to that end. It has always been a pleasure to give of my time and efforts to the upbuilding of each county and our state organization. Furthermore, I have considered it no less a sacred duty to meet from time to time and have a free interchange of ideas and experiences with my colleagues, thereby improving ourselves, perfecting a more profitable organization, and being better able to give relief to diseased humanity whom we serve.

With this object in mind, I am imbued with an idea by which this may be partially accomplished. Namely, if our State Society is to enlarge its service as well as its numerical strength, we should more vigorously carry forward the education of the public. I believe that the time is now opportune for teaching the public that

organized physicians are unselfishly carrying on research work to prove or disprove what seems to be worth while, and to correlate certain concrete facts, that the public might be relieved of so much mystic ignorance and unnecessary suffering and thereby be the benefactors.

Savage man confused life with motion, he was puzzled by the rustling of leaves in the forest, the crash and flash of thunder and lightning, and could see no casual relation between a natural object and its moving shadow, a sound and its echo, wind, clouds, storms, earthquakes, and other sights and sounds in nature were to him the outward and visible signs of malevolent gods, demons, spirits or other supernatural agencies. The natural to him was the supernatural, as it still is to many of us. He therefore worshipped the sun, the moon, the stars, trees, rivers, springs, fires, winds and even serpents, cats, dogs, apes and oxen; and as he came to set up carved stocks and stones to represent these, he passed from nature worship to fetish worship.

Disease, the savage was prone to regard an evil spirit or the work of such spirit, to be placated or cajoled by burnt offerings sacrifice. A further association of ideas led him to regard disease as something produced by a human enemy, possessing supernatural power and closely allied to witchcraft, which he aimed to ward off by appropriate spells of sorcery, similar to those employed by the enemy himself. Again, what he saw in dreams, or in an occasional nightmare, from gluttony, suggested the existence of spirit world apart from his daily life, and a soul apart from his body; and in this way he hit upon a third way of looking at disease, as a work of offended spirits of the dead, whether men, animals or plants. These three views of disease are common beliefs of the lowest grades of human life. Savages as a rule, cheerfully accept all three, while a lingering belief in human sorcery and the displeasure of the dead is always a trait of the peasant and sometimes his descendants in "civilized" communities.

\*Read before the General Session, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

Thus, from these beliefs sprang Shamanism and we had everywhere the advent of the medicine man, and the bilbe or witch doctor. The Shamon handles disease almost entirely by psychotherapeutic maneuvers which serve to awaken a corresponsive state of auto-suggestion in his patient. He does his best to frighten away demons of disease by assuming terrifying aspects, covering himself with skins of animals so as to resemble a hideous beast walking on hindlegs, and resorting to such demonstrations as shouting, raving, slapping his hands, or shaking a rattle and pretending to extract the active principles of the disease by sucking it through a hollow tube. To prevent future attacks, he provides his patients with a special fetish or amulet, to be worn or carried about his person. How many of you have not known people who continually carried a "Buckeye" bean in their pocket, or wore a pouch of assafetida around their necks? Furthermore, perhaps any fanastic thing he may elect to do or not to do, such as passing in or out of a door, stepping over an object with intention, he considers in the light of "making medicine."

We may smile at these phases of Shamanistic procedures, but except for the noise and gestures, they are not essentially different from the mind-medicine or faith-healing of our own day. Both rely upon psychotherapy and suggestion, and for a sick savage, the fantastic clamor made about him might be as effective as the quieter methods of Christian Science to modern nervous patients.

As the savage advanced a little further in the knowledge, which is gained by experience, it was natural that some special talent for herb-doctoring, bone-setting and rude surgery should be developed, and such specialist soon perceived that a number of poisons are also remedies under various conditions. Medicine which Huxley has styled the foster mother of so many sciences really began in this primitive period.

Medicine is not an exact or perfect science and will never be, though it is founded upon known true scientific and basic principles which are governed by cause and effect. So much has been discovered and brought to light upon these basic and scientific principles that an educational foundation for the study of medicine has been greatly enhanced.

Therefore, before one is now qualified to treat the sick, he shall have graduated from high school, had a minimum of two years collegiate or university specialized study and spent four years of intensive study in a recognized medical school. With this training, he is still required to pass a State Board examination to secure license to practice. In addition to the above requirements, the public has come to demand, and many State Medical Boards now require, that he shall spend one year of clinical work in some A grade hospital. We have various healers in our midst who have had no particular preparation, save the art of auto-suggestion, and others whose preparation has been chiefly along lines of mechanical manipulation and who know nothing of, and even claim that there is no such essential study as pathology. They furthermore assert that bacteria are only scavengers, and harmless to the host, and that there is an "undiscovered" (mythical) nervous system (that the Lord has not yet revealed to our anatomist) and impingement upon these nerves may be inhibitory to some or stimulative to others, and thereby causes all deviation from a normal state of health.

I have witnessed patients who had been in the hands of such dangerous, so-called doctors, with ruptured abscess of the liver (shown by post mortem), breaking up of tubercular foci in the joint, promising to make it flexible and normal, which has resulted in death from acute miliary tuberculosis within six weeks. I have witnessed gangrenous bowel, and death of babies from utter starvation following the work or advice of such ignorant and unscrupulous charlatans.

We, as regular physicians, owe more to human society than the mere making of our living. We should not "build a fence" around ourselves and our own private clientele and keep this knowledge from the public. We owe our great commonwealth enlightenment upon such, as the preservation of good health, the prevention of the spread of disease and the most scientific and successful methods for the relief of suffering or the prolongation of life.

We must conscientiously realize that our neighbor's children have the same right to protection of life and health as our own, hence we owe it to them.

We are now at a better understanding with a thinking public than ever before, and everywhere people are coming to

know that a doctor is their real friend, that he is ever working to safe-guard their health and protect them from the ravages of disease. That he is not blinded with mercenary motives, and that he is trying to make of them more useful men and women. The intelligent public should be taught that all relief or healing of human ailments is founded upon the basic sciences, such as anatomy, pathology, bacteriology, knowledge of which leads to a correct diagnosis. The attempt of therapy without a thorough knowledge of these fundamentals is to work in ignorance and mysticism.

Quoting from the great philosopher, Herbert Spencer, "Without health and energy, the industrial, the parental, the social and all other activities become more or less impossible," and that, "vigorous health and its accompanying high spirits are a larger element of happiness than any other things whatsoever. Consider how ill health hinders the discharge of duties, makes business difficult, often impossible, produces an irritability fatal to the right management of children; puts the function of citizenship out of question; and makes amusement a bore."

Disraeli says — "Public health is the foundation on which reposes the happiness of the people and the power of a country. The care of public health is the first duty of every statesman."

Our own venerable William Howard Taft said—"The care of the individual and family health is the first and most patriotic duty of every citizen."

We hear someone bring up the argument of personal liberty and private privileges, but since disease, though it originates in the individual, is transmitted by him unwittingly to others without their knowledge or consent, and since in many other ways it directly jeopardizes the happiness of others and impairs our state itself, a person's disease manifestly is not exclusively his own concern, but is also the concern of every citizen of the state.

Many states have already passed basic science acts, or measures purported to regulate all healing arts, and other states are getting ready to pass them. If the various healing arts have real merit, and are founded on scientific fundamental principles, they will only be made better by acquiring a knowledge of the human body and the pathology of the various diseases to which it is heir. I profoundly

believe it is a duty we owe to the state, to bring these truths before the public, especially to our legislators.

Questionnaires sent to the secretaries of the various county societies of the state show plainly that the best working societies are those that have rather frequent meetings, and usually those that have relatively large fees, and consequently have frequent social functions, smokers, and "talk feasts," etc. I would like to see more frequent meetings of the "dormant" county and district societies with an assessment sufficient to give more social functions. They could bring into their meetings outside talent, if need be. This would make their gatherings more attractive and interesting and create a greater desire to attend. Doubtless each of us have, after attending a county, state, national or other medical gathering, returned home with the throb, impulse, and determination to do more research and study our cases more carefully than we had ever before attempted.

I want to see every reputable and eligible practitioner in the confines of our state become a member of his county, state and national society. He will make the society better, he will make himself better, and thereby be of greater service to his community. A man is either keeping up with the rapidly advancing tide of knowledge, or else he is retarding, rusting, and becoming stagnant. To attend society meetings, enter into discussions, interchange ideas, keeps the mind flexible, bright and active. Living to one's self, benumbs his perspective, dulls his intellect and reacts upon his community.

There two objectives I want to see put forward in this association, one is a paid organizer to work out of the state secretary's office along with the councilors of the various districts. He should endeavor to get every eligible man into the society and stimulate greater activity of the councilors and aid in their work of organization. He should also work with our legislative committee, and other bodies, in the formulation and adoption of such laws as will protect and benefit the public. The *second object* is an annual meeting of the secretaries of the various county societies together with the president and secretary of the State Association. They should work out programs, and other activities that may seem advisable to the best interest of the county or district soci-

eties. There should be some arrangements made to pay their traveling and hotel expenses, for the success of every society is largely dependent upon the efforts of the secretary.

We need a closer acquaintanceship with our own State Medical University, and its extension department. Also, we need to get the extension department more acquainted with the men in the confines of our own state who have outstanding ability along certain lines. We should use these men, both within and without, the University, as well as select talent from other states to hold post-graduate courses, clinics and lectures along their certain and specialized lines.

During the past 20 or 30 years discovery has followed discovery so rapidly, and the field of medicine has become so large, that it is becoming a real burden for a student to acquire a medical education. So much information is poured into their minds that proper sane thinking and correct association of facts or the relativity of facts may be completely lost sight of. I am fully conscious that more than one standard of medical education would be impracticable. Four years of high school, two years of academic work, four years in medical school, and one year of clinical work as an intern in a modern hospital, is, in my opinion, the minimum requirement before one of our young men is properly prepared to look after the health of a community. There is no reasonable way of eliminating any of this requirement; it all seems necessary. However, I do believe that we have reached that period, where new fields have been so thoroughly explored, that it is well that we stop and analyze, and more properly assimilate the information gained, and more stabilize our minds to these facts before attempting to add still more burdens to our medical students. In other words, stop the advance of requirements until such time as other new discoveries and facts demand a still further requirement for a higher education.

I sincerely hope that I may see at an early date, a few of the foregoing suggestions become living facts, and again with deepest appreciation of the honor and confidence you have bestowed upon me, and the responsibilities resting thereon, I earnestly implore your most valuable assistance and co-operation in making this *Good Society* a better one.

## SURGERY AND GYNECOLOGY\*

L. M. SACKETT, M. D.  
OKLAHOMA CITY

*Gentlemen:*

My address to you, as members of this section, is not going to be on the conventional order of a surgical or a scientific subject, nor marking the advance of the profession in the last decade, but rather a change in the previous style of the custom. I believe the time can be better used by making the address short and apply it on the papers and discussions. This will be decidedly more entertaining and instructive.

As surgeons, we are naturally interested in this particular section. Do we, or a certain per cent of us, attend these meetings regularly merely to get acquainted with our competitive colleagues, for a vacation, or to meet again our old friends in and out of the profession for a chat and a good time? This is, in a measure, a coincidental pleasure, and something to look forward to each year. But to me the biggest purpose is to learn—learn by writing or discussing a paper. Even hearing these is certainly educational. We all learn by it.

There never has been a meeting which I have attended that I did not feel well repaid for the going. I got hold of many things that were new to me and were a help to me in my work. Things that I had not read of in the late literature. Things that were originated and developed in another man's mind. The things that I learned in writing a paper by going through the authorities, made me study, look and do more reading than any other excuse I might have. Can not any man be benefited with such effort?

It has been my observation that if it were not for a faithful few, our association, this and other sections, would have declined, slumped and rated low with the other state associations. I refer first to the officers of the institution, who have worked tirelessly to make these meetings harmonious and successful. No one knows, unless he has served in this capacity, what a real task it is to produce results and make everybody satisfied and glad he came.

\*Chairman's Address, read before the section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

Lack of interest, lack of time and embarrassment are perhaps the principal causes why we do not have larger attendances and better interest. All these remarks, please understand, are principally to be applied to this section in which we are mostly interested.

It does not seem proper or necessary that men should have to be so emphatically urged, begged, reminded or nagged to get them to write a paper or even discuss one. Yet it is true that mainly speaking it takes all this. To me it is not fair to put all of responsibility of success on such a few who are always willing to help, when each and every member should share an equal responsibility to make our meetings the best in the country.

When I started to arrange this program for this section, I had an idea. That idea was to give any man of the State an opportunity of participating as space and time would permit. Especially the colleagues from the smaller towns and cities.

Now no one must take offense by misconstruing my motives in these remarks. I assure you they are sincerely, honestly and fairly intended, and I want to thank each member on this program for his cooperation. I have many times, and so have you, heard such remarks as these: First, "Aw, what's the use of going—you hear the same old stuff over again." Second, "The same old ones are always on the program—why don't they give some one else a chance once in a while?" The third complaint or excuse which we use "every day in every way" is: "I just can't find the time."

Answering the first complaint: These subjects never get old. We learn more about them every year, every day. Compare today's work with that of twenty years ago—how did we accomplish the improvement—staying at home?

Complaint number two: Nine out of ten times nobody else will agree to serve, even though invited and urged, except these faithful "same old ones." If you doubt this being true, write every member of this association for a paper, and see who is willing to sacrifice a little time, labor and expense to help keep up the standard.

The last excuse, "I just can't find the time." What a glorious fib, in most instances, what a worthless alibi. There are very few men who are so busy in this

State that they can't take such a short time to go and learn to teach something to somebody. He loses nothing, his patrons want him to go. It adds more respect and confidence in him. We are certainly no more busy than the biggest men in our profession who go regularly to all their meetings. It is a matter of duty with them—so it should be with us.

Why is it so hard to get members to serve on the programs? Is it because the men from the smaller places are more reticent, or embarrassed about appearing before those from the larger cities? Is it because of lack of confidence in presenting a subject, or simply a lack of interest or energy?

I have this year taken pains to write the doctors in the smaller towns to serve us. You and I know that some of our best thinkers and workers are men in small places. They are not inferior to men in larger cities. True they lack facilities, yet they can present a subject that will help very materially the man in any city. They have problems to solve that the big town man knows nothing about. I practiced in a small town for seven years. I realize some of the difficulties, the emergencies, the judgment required to practice there.

None should feel embarrassed in appearing. It helps both large and small town men. The large city man is just as anxious to hear of the small town work as the small town man is of the large city work. It is interesting and instructive to both. The getting up of a paper and weathering its discussion is what benefits and improves the author. It serves to teach him, to encourage him and to stimulate him to more study and achievement.

Cooperation is imperative if our meetings are to be profitable and our profession steadily advance. So again let me urge each one to realize that such success cannot be fairly rested on the shoulders of a few. Each and every one should see his respective responsibility, assume it as an obligation, as a duty and help make our meetings bigger and better for us all.

I hope you will enjoy the entire program. It has required much effort in the making. The subjects have been selected to offer the best interest, to represent equally each department and with no similarity nor conflict.

In conclusion, I ask you to consider this short address as a friendly criticism and a friendly suggestion. This then is the true interest with the sincerest feeling of friendliness to each of you.

### OBSTETRICS AND PEDIATRICS\*

GEORGE R. OSBORN, M.D., F.A.C.S.  
TULSA

It would be difficult for me to address this section if it were composed entirely of specialists in obstetrics and pediatrics, as the two specialists have little in common in the problems of practice. However such is not the case, as a large majority do general practice.

We are mutually concerned with one of the most important phases of human life namely, reproduction. It is one of the most vital, considered from the standpoint of the perpetuation and progress of the human race.

The complexity of life among civilized nations together with the long period of infancy in the human animal has evolved a race no longer entirely subject to the natural law of the survival of the fittest.

When man, the human animal began to think and reason, or in biblical language "partook of the fruit of the tree of knowledge" then did his responsibilities increase, and he was obliged to think faster, to meet and cope with the troubles that beset the path of progress. Today one must think to survive.

We no longer practice medicine empirically. Organization has become essential to progress in all lines of human endeavor and out of organization has grown specialization, which in man's earliest advance beyond the realm of savagery, was termed "division of labor."

In the practice of medicine and surgery, specialization in obstetrics is comparatively new. There are several reasons for this, chief of which, was the early development of mid-wifery. Once a custom is well established it is difficult to change it, and it is essentially true that mid-wifery preceded the practice of medicine. Another cause which has delayed the development of the obstetrical specialist is ignorance on the part of both

the public, and the medical profession. The public did not know better obstetrics could be done, and the medical schools have not given obstetrics the attention it should have. No practitioner of medicine or surgery should be termed a specialist until he has attained a high degree of skill and knowledge. Practically, however, it is impossible to set a certain standard by which human accomplishments can be accurately determined or measured, but it is possible to determine those methods and principles of practice which have proved most efficient and let them be the guide to a better and still better practice. In other words, *knowledge* must precede skill, and he who would be a good obstetrician must first know obstetrics.

The charge is often made of late, that medicine and surgery are over-specialized—keen competition has made it so, and perhaps the charge is justified. There is a need for standardization of practice in all lines of medical and surgical practice. Particularly is this true in obstetrics. We see in the automobile industry a most striking example of the value of standardization.

The speed car and the truck are extremely limited in service, although highly specialized. However, when the mechanical principles evolved by the development of these highly specialized cars are combined and adjusted to each other, we have the standard car which renders universal service.

Standardization of practice does not mean routine practice. It means the use of accurate data and application of scientific principles, to practice.

Many physicians do not choose to do obstetrics, but comparatively few escape doing some. Mid-wives, osteopaths, chiropractors, and all graduates in medicine may do obstetrics, or what is termed obstetrics. Such a lax license bespeaks a low standard of practice and attaches little importance and no dignity thereto. For many years the vital statistics of the U. S. Public Health bureau has shown that annually 250,000 babies that have attained the viable stage of gestation are stillborn, and that between 20,000 and 25,000 mothers die each year as the result of childbirth.

These figures may not mean much until reduced to correspond with the average man's conception of numbers. So to

\*Chairman's Address, read before the section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

avoid any reflection upon the ability of any one present to conceive of the enormity of these figures, I hope no one present will question the statement that one out of ten births, is a still-birth.

There is as yet no way of estimating the number of blind and crippled children, nor the number of maimed women that result from improper obstetrical care.

It is gratifying, however, to learn that recent reports compiled by the Maternity and Infant Welfare Bureau, show a slight improvement.

How can we continue this improvement? I believe by standardization of obstetrical practice, the same as surgical practice is being standardized.

The first step in standardization is to learn what we are doing—what methods and procedures produce the best results, and we can learn that, only by accurate and adequate records. This is the basis upon which hospitals are standardized.

If these records from maternity hospitals and private practice show that mothers who have proper prenatal care have a lower per centage of still births and maternal mortality, pre-natal care will be demanded. Accurate and adequate records, will eventually determine the best obstetrical anesthetic, the best method of inducing labor, the best procedure in handling eclampsia, placenta-previa, etc.

These same records will also determine the qualifications of those who may practice obstetrics. Good standardized obstetrics may be done in the home as well as in the hospital, although the standardized hospital offers many advantages, and is rapidly gaining favor with the public. However, some obstetrics will always be done in the home.

Every practitioner of obstetrics should keep accurate records of his cases through pregnancy, labor and the puerperium. If he does that, and thus applies the knowledge gained from his records, together with scientific principles of medicine and surgery, he will then have standardized his practice.

## RELATION OF UROLOGY TO THE PHYSICIAN AND SURGEON\*

ELIJAH S. SULLIVAN, M.D.  
OKLAHOMA CITY

In discussing urology, we must not forget its needs in general practice. We should realize every form of non-operative treatment, with definite indications in every case as to the limitations of such treatment, and the indications for surgical intervention.

There are a few principles which should guide the physician in diagnosis and treatment of genito-urinary diseases. In case of obstruction of the urethral bulb La Fort's sound is reliable. Hematuria, occurring in patients with prostatic hypertrophy, catheterization should be replaced by cystostomy. Spontaneous or recurring cystitis, or cystitis resistant to treatment suggest tuberculosis. Catheterization of the ureters must be preceded by examination of the bladder. Roentgen rays are helpful in renal-pyuria in which tuberculosis infection cannot be definitely established. In cases of renal calculi the entire urinary tract should be examined with the Roentgen ray.

We are indebted to Drs. Van Buren, Cabot, Keyes, Morrow, Otis, Alexander, Watson, Senn, Braasch, Young, Caulk, Lewis, and a host of others who pioneered and cleared the way for us, for modern urological development thru their labors. We should undertake an educational program, first, for the professional; and second for the lay public's benefit, in order to acquaint both more intimately with the facts of urology. The general practitioner who still thinks prostatectomy a measure of last resort, should be reminded that in the hands of competent urologists, this operation carries with it a mortality of slightly more than that of acute appendicitis. Blood in the urine is a symptom of significance. In such a case empiric and symptomatic management is a dangerous procedure.

Even as late as 1918, Dr. Hugh Cabot said: "Urology as a specialty is still young." It is not more than a generation since there have been in America, men of eminence who devoted themselves exclusively to this subject. The last generation

\*Chairman's Address, read before the section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

however, has developed in this country, a large group of urologists, who are authorities, not only in this country, but throughout the world.

I wish here to say that not all diseases of the prostate are of gonorrheal origin. When obstructive changes in the prostate occur, it is often characterized by degenerative lesions in other parts of the body. Prostatic obstruction in itself may augment the damage already present in the cardio-vascular system.

Simple forms of cardiac therapy are important to the surgeon. A medical consultant is not always at hand. Even if he is, it is desirable that he be able to co-operate with the surgeon intelligently. In the election of the time and method of operation and the type of anesthesia, the surgeon must attach weight to the condition of the kidneys. He must understand the essentials of cardiac physiology and therapy if he would give his patients who undergo prostatectomy the best chance to survive. The rapid emptying of the over-distended bladder is attended by a marked fall in blood pressure. If operation is done, while the blood pressure is still falling, there will be a continued drop afterward. If on the other hand the bladder is emptied very slowly the blood pressure will fall much less; and if the operation is delayed until the blood pressure becomes stationary, there will be less post-operative fall. Since a rapid fall in blood pressure is followed by a decrease in urinary output, it is clear that this sequence is most undesirable.

One is aware of the frequently repeated dictum that patients after prostatectomy must be got out of bed quickly, or they will die of hypostatic pneumonia, which practice is unwise, for few patients develop broncho-pneumonia from lying in bed.

The importance of non-venereal genital infection to medicine and surgery is demonstrated by the various remote symptoms and complications which they so frequently cause. Since focal infection has been given such an important role, the prostate and seminal vesicles have been looked on as frequent sources of such infection. These structures, frequently found responsible for remote symptoms and complications, owe their disease condition to foci in other parts, but once being infected, they may continue to shower the system with virulent disease-produc-

ing organisms even after the primary foci have been eradicated. Treatment of the diseased, non-venereal prostate will result in no lasting benefit unless the primary foci are removed.

Arthritis is perhaps the most common complication of genital infection both venereal and non-venereal. Among many non-venereal cases it was present in 12 per cent. The arthritis in these cases differed from that seen in gonorrheal infections, by being as a rule, multiple, involving a number of joints, which was in marked contrast to the arthritis of gonorrheal origin. The non-venereal joint involvement was usually sub-acute or chronic. It is possible that the renal infection and genital infection could have occurred simultaneously by metastasis from distant foci, or that the renal infection could be caused by extension by way of the lymphatics between the deep genital structures and the kidney, or by obstruction of the ureter where it crosses the seminal vesicle, causing partial renal stasis. The importance of these infections to prostatic surgery will no doubt be more evident as more study is given to the subject. There are undoubtedly many cases of non-venereal prostatitis in old men in which the symptoms simulate those of prostatic adenoma and carcinoma, and these should readily be recognized.

Treatment of non-venereal genital infections consists, in removing distant foci of infection, and in attention to the local trouble. In acute cases suppuration must be looked for, and when it occurs should demand immediate drainage. The acute epididymitis, if allowed to go too long, is prone to involve the testis and thus require complete amputation. When it is necessary to do this, the vas deferens of the healthy side should at the same time be divided between ligatures, in order to prevent descending infection on that side. The prostate and vesical infection is best treated by the usual method of massage, sounds and irrigation, but heat applied thru the rectum, by hot douches is one of the most valuable procedures. Diathermy is also useful, and judging from what experience I have recently had with it, I am inclined to believe that it has great possibilities. Vaccines are sometimes efficient, but in acute cases must be used cautiously, else the effect may be aggravating rather than alleviating. It is of extreme importance to treat these cases

in an acute state, with the most respectful gentleness, avoiding too early or too vigorous massage, and above all not meddling with instruments, especially the cystoscope, in order to satisfy one's curiosity with regard to the kidneys. This rule in the management reduces renal complications, means a lighting up of an existing renal infection by showers of bacteria from the prostate. Only in extreme cases should cystoscopy be done, and then only after thoughtful consideration.

One is rewarded by gentleness in handling old prostatics. Many cases exist where no surgeon would consider major surgery. Gentle measures bring the patients comfort and life extension. Many urologists are today practicing conservatism, not only in the management of surgical ailments of the prostate, but also such procedures are selected by them in dealing with kidney lesions in which for one reason or another, radical measures are contra-indicated. There are men doing general surgery who appear still unappreciative of the benefits derived from gentle measures in dealing with prostatic disease in aged and seriously debilitated males. Repeated readings with 'phthalien should be tabulated; blood chemical studies should be made in series; and blood pressure observations should be recorded at regular intervals. By the adoption of systematic, properly given massage to the gland, where infection is demonstrated, much can be accomplished. The indwelling catheter is a boon in this type of case, and gives no discomfort to the wearer. The two procedures employed conjointly, prostatic massage, and the indwelling catheter, will in many instances suffice to give the patient necessary relief. He will empty his bladder better as time goes on, and not infrequently the bladder residual will be materially reduced. Suprapubic cystostomy must be given an accredited place in the management of prostatics who cannot undergo prostatectomy.

Therapeutic courage grows out of the clinical emergency quite as much as out of general preparedness, and urges caution in any present day discussion of the kidney dyscrasias. It proves particularly that we should discard the blanket term "uremia" coined many years ago. To described a symptom complex supposedly due to a single cause and rely definitely on the physiologic chemist to separate and

distinguish the large group of entities that fall into the nephritic group of diseases. Clinical guidance is never more desired than in the conduct of border line and unusual cases. The greatest puzzle is to define the physiologic limits, and to mark the bounds where disease begins. Unfortunately we cannot turn to the physiologic chemist in these emergencies because he is untrained in clinical medicine, and the only clinicians fully trained in physiologic chemistry belong to the more recent graduates in medicine whose clinical judgment has not been fully tested. The conduct of these cases follow the only other course left open; to deny the validity of certain accepted laboratory interdictions, and to be guided wholly by the patient to unusually heroic measures for relief.

Real progress in urology will not make its appearance until the physician and general surgeon abandon the idea that it concerns only contagious and functional pathology of the genitalia proper, and ignore the medical and surgical condition of the kidney, ureter, bladder and senile prostate.

1009 Medical Arts Building.

## THE HISTORY OF THE CODE OF MEDICAL ETHICS\*

W. S. MASON, B.S., M.D.  
CLAREMORE

Our history of medical ethics, prior to 450 B. C., is as is our history of medicine, more or less legendary. The first authentic attempt to formulate rules for the members of the medical profession was a code promulgated by Hammurabi, King of the First Dynasty of Babylon, about 2250 B. C.. These regulations dealt mostly with the compensation that a physician should receive for his work. They were rather unique, though crude, for they set a fee for certain operations, if successful, but a penalty, if unsuccessful.

The next records of any attempt to formulate rules for medical conduct were of those adopted by the followers of Aesculapius to perpetuate their temples and doctrines. About 550 B. C. Pythagoras tried to organize his followers and adopt rules for maintaining a high standard of charac-

\*Chairman's address, read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

ter and clean living among themselves. These were added to by Socrates in his teachings. The immediate success of these attempts is not known, but the later results were a gradual addition and elaboration until the present.

Evidently these attempts were the incentive for Hippocrates in about 450 B. C. to formulate his code which was one of the greatest contributions to the medical profession along ethical lines. The Hippocratic oath was adopted by the Aesclepeadae and constituted their code until their suppression by the spread of the Christian religion, at which time its principles were adopted by the medical schools, monasteries and hospitals and served as the recognized principles of medical ethics until the 18th century.

The oath had four main points in view.

First, that every physician should respect his teacher and preceptor and show his gratitude by extending him aid at all times.

Second, that he should teach the art of healing to his sons, and sons of his teacher, if they so desired, and others who bound themselves by the oath. This tended to a hereditary perpetuation of the profession.

Third, that the great object of medicine was to relieve human suffering and to prolong life, but not for mere pecuniary gain.

Fourth, that, for the safety of his patient, the physician must live a life of virtue, temperance and integrity.

Sir Thomas Percival was born in Warrington, Lancashire, England, in 1740; educated at Warrington Academy and Edinburg, later taking his medical degree at Leyden. He began writing moral essays as early as 1775. In 1803 he published his "Medical Ethics, or A Code of Institutes and Precepts Adapted to the Professional Conduct of Physicians and Surgeons." This code was adopted by the profession of Great Britain and, with some changes, continues as such to the present time. As will be shown, Percival's code is the modern foundation for most of the attempts at a code of ethics in the United States.

These attempts to formulate a code of medical ethics in the United States were made at first by the various local societies.

The New Jersey Medical Society, organized in 1766, incorporated many ethical principles in her constitution. In 1794 Benjamin Rush of Philadelphia, following

in the footsteps of Dr. John Gregory of Edinburg, published his series of lectures on the duties of the physician. Dr. Samuel Brown of Transylvania University, Lexington, Kentucky, formed a secret society of medical men whose membership was bound by a very rigid code. This society, Kappa Lambda Society of Aesculapius, was founded and working about 1820. In 1823 the Philadelphia Chapter published their code, an acknowledged abridgment of Percival's code. In the same year, 1823, the New York State Medical Society appointed Drs. James R. Manley, Felix Pascalis and John H. Steele as a committee to draw up a code of medical ethics. Their report was a system of medical ethics with five divisions.

1. Personal Character of Physicians.
2. Quackery.
3. Consultation.
4. Specification of Medical Police in Practice.
5. Forensic Medical Police.

New York seems to have taken the lead in the formation of the American Medical Association, the formulation of its code of ethics and later in the amendment of the code.

The first meeting of the delegates from the various states and local societies took place in New York in May, 1846. At this meeting a resolution was passed stating a need for a code of rules and regulations and a committee was appointed to prepare a code to be reported in May, 1847, at Philadelphia. This committee was composed of Drs. John Bell, Isaac Hays and G. Emerson of Philadelphia; W. W. Morris of Dover, Delaware; T. C. Dunn of Newport, Rhode Island; A. Clark of New York, and R. D. Arnold of Savannah, Georgia.

At the meeting in Philadelphia the organization resolved itself into a permanent American Medical Association which adopted the code of medical ethics as presented by the above committee. This code, the most complete of any written at that time, was formulated in a great part from the works of Drs. Percival, Gregory, and Rush.

The American Medical Association added the following clause to their by-laws: "No local or State Medical societies, or other organized institution shall be entitled to representation in this association that has not adopted its code of ethics; or that has intentionally violated or disre-

garded any article or clause of same." This forced most of the state and local societies to adopt the code of ethics of the American Medical Association, thereby giving us a common standard of professional conduct and duties.

The following headings give a synopsis of that code:

1. Duties of Physicians to their Patients.
2. Obligations of Patients to their Physicians.
3. Duties of Physicians to Each Other and to their Profession at Large.
4. Duties for the Support of Professional Character.
5. Duties of Physician as Respects Vicarious Office.
6. Duties of Physician in Regard to Consultation.
7. Duties of Physician in Case of Interference.
8. Duties in Case of Difference Between Physicians.
9. Duties of Profession to Public.
10. Obligations of Public to Physicians.

This code stood without much criticism until the early eighties, when there arose in New York considerable dissention over the question of consultation with irregular practitioners. This led to a rupture which was not remedied until the 54th annual meeting held at New Orleans in 1903, when the code was amended to the apparent satisfaction of all concerned. At the 63rd annual meeting held at Atlantic City in January, 1912, the code was revised and remains the same at the present time.

Practically all of the civilized nations have adopted some code of medical ethics. Some of them enforced by the profession, others as Germany, have a court of honor before which medical men may be tried and, if convicted, fined for breach of professional rules.

As can be seen from the history, the basis of our code of ethics is the Hippocratic oath, and if it is translated in its wide meaning, we have something which will keep us in good faith with ourselves, our profession and our public if we but follow.

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#### CHRONIC OTORRHOEA\*

A. C. MCFARLING, M.D.  
SHAWNEE

In bringing to you a paper on chronic otorrhea, it is not my purpose to discuss its various clinical phases, except in so far as may be necessary to more fully set forth the suggestions herewith offered for its prevention.

Before discussing the clinical phase commonly referred to as chronic otorrhea, let us consider for a moment the prevalence of acute otitis media. Some idea as to the frequency of this disease in the acute stage may be gleaned from the following brief quotations from literature. Smith says, "in 613 admissions, 33.4 per cent of the children either had otitis media when admitted, or developed it while in the hospital." Renaud examined 102 sick infants and found otitis media in 73. According to Guthrie, "suppurative otitis media is an extremely common disease in early life. Judging from the results of post mortum examinations, it appears to be present in approximately 80 per cent of bodies of infants under one year; however, some difference of opinion exists as to whether the pus found in the middle ear of these infants really indicates the presence of otitis media in all cases."

Making ample allowance for inaccuracy in such statistical reports, as are available, and adding to this nucleus the cases developing in children of all ages not comprehended in the reports, also the adult cases coming under our attention, the total number of such cases will be found to run into a figure almost challenging belief.

Many of these cases for reasons not necessary to mention in this connection, either have no treatment or having treatment, do not prosecute same to a successful finish, and therefore drift into the chronic stages of the disease. While some difference of opinion may exist as to just when such an ear should be called chronic, let us, for the purpose of this paper, consider the

\*Chairman's Address, read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

term "chronic otorrhea" as applicable to all cases of otitis media which have discharged pus for a period of two or more years.

If we further divide these cases into two classifications, namely, (1) Those who retain a useful amount of hearing in the affected ear, and (2) those ears in which for practical purposes the hearing is lost, we are at once impressed with the necessity of a therapeutic regime of sufficient flexibility to lend itself with equal facility to the treatment of all cases of either classification. That such a regime does not exist at this time is common knowledge among otologists.

That such a regime could be inaugurated by proper use of such means as are at our command today, without the necessity of waiting to borrow a bit of surgical technique or a new formula from the store-house of future research, is the one thought which constitutes the burden of this paper and deserves the most careful consideration of both the lay and professional mind.

The lay mind must consider it from a cooperative view point, because with proper cooperation otitis media, even though accompanied with mastoiditis, can be cured in the acute stage by the well known principles of surgical drainage.

The professional mind must give consideration to the great need of proper information to the public.

They should be taught that it is dangerous to wait for a child to "outgrow" a discharging ear. This fallacious doctrine is largely responsible for the great army of unfortunate sufferers from chronic otorrhea, who drift from one otologist to another, seeking relief.

They should be taught that while the difficulties and dangers attending the treatment increase, the chances for complete recovery decrease with the chronicity of the disease.

They should be taught that the term "chronic otitis media" is a misnomer, misleading in its usual interpretation, and that the cases so designated are with perhaps few exceptions chronic mastoiditis, as well.

They should be taught that all cases of chronic mastoiditis must of necessity pass through an acute stage, at which period they are readily amenable to treatment by surgical procedures, which may be accomplished at this time with the minimum of

danger and the maximum of benefit to the faculty of hearing and health of the individual.

In conclusion, let me say that while we are unable to prevent the occurrence of acute otitis media, we could, with proper cooperation of the patient, prevent its passing into the chronic stages, which are difficult and in some instances impossible to cure. A little concerted effort on the part of all physicians in bringing this bit of information to the public mind would eventuate in a therapeutic regime that would save much suffering by curing that which we can not prevent and preventing that which we cannot cure.

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#### COCAINE NO LONGER NECESSARY

Cocaine has been widely used by nose specialists in spite of the toxicity and habit forming tendencies of this dangerous drug. The double purpose for which it is used is to produce anesthesia and to shrink the mucous membranes.

It has now been discovered that a combination of butyn 1-2 per cent, and ephedrine 1 per cent, produces anesthesia and shrinks the mucous membranes, both actions being markedly prolonged with this solution. The dosage used is much less toxic than the concentration of cocaine used to produce equal anesthesia. Butyn-ephedrine solution is not habit forming and requires no narcotic blank. It was developed in the research department of the Abbott Laboratories, North Chicago, Ill., and is supplied in 1 oz. bottles.

#### UROHEPATIC SYNDROME

In two cases of coexisting urethral stricture and hepatic cirrhosis presented by Ralph L. Dourmashkin, New York (*Journal A. M. A.*, March 24, 1928), fatal cholemic manifestations followed immediately after urethral sounding. Autopsy in one case revealed the presence of urethral stricture, hobnail cirrhosis of the liver and acute degeneration of the renal epithelium. A mild jaundice followed intra-ureteral manipulation for a stone in the patient presumably having hepatic cirrhosis. These observations point to the dangerous possibilities which may result from instrumentation of patients suffering from hepatic cirrhosis. Such instrumentation should be undertaken with greater care and reserve, and more judgment should be exercised as to the advisability of tampering with the urinary tract. The cases are of clinical significance in that they emphasize the importance of a thorough general examination with especial reference to the liver in cases presenting obstructive lesions in the lower urinary tract.



ELLIS LAMB, M.D.  
CLINTON

PRESIDENT 1928-29

OKLAHOMA STATE MEDICAL ASSOCIATION

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol XXI JUNE, 1928 No. 6

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

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### EDITORIAL

#### THE TULSA MEETING

Notwithstanding the heavy rains which made many roads impassable approximately 500 Oklahoma physicians registered at the Tulsa meeting. Sections were very well attended but there was some complaint and confusion due to noise, and in one case, a section moved its field of operations. The exhibits were very well up to the standard and the exhibitors expressed themselves as satisfied with the meeting. Clinics covering many fields of work were

heard at the Morningside and St. John hospitals Thursday, Friday and Saturday.

While the golfers were able to get in some of their strokes, the weather also interfered with them to some extent. The Medical Reserve Officers' dinner, while not largely attended, was greatly enjoyed by those fortunate enough to be present. The President's reception and dance was a huge success, several hundred people being present.

The Tulsa Medical profession went to great length to make the meeting a success and, as usual, their hospitality was unbounded and thoroughly in keeping with the well known Tulsa spirit. Many congratulations were heard upon the reception extended to the visiting profession.

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#### YES. YOU WERE HASTY

On May 2nd, the Tulsa World issued an editorial under the heading, "Maybe We Were Hasty." The editorial is as follows:

"Some days ago The World, editorially, praised the purpose and the motives that lay back of the plan for a National Child Health day on May 1 of each year. The object appeared to be highly beneficent, although sponsored by one of those thousand and one so-called national organizations that spring from nobody knows where, and whose founders generally remain in the background. We are not now so sure that we were on the right tract in commending this movement.

"Yesterday we read that some seventy doctors and dentists were preparing to swoop down on the State capital for the purpose of organizing a 'permanent child health council' in the State, and to designate May 1, as Child Health Day all over the State. Now, doctors and dentists are not notorious for fostering movements of this kind from purely philanthropic motives. It would have fallen much more gratefully on the ears of the public to learn that public school heads, recognized health associations and parent-teacher associations were fostering the movement, rather than to be told that doctors and dentists were rantankerously enthusiastic in behalf of the 'cause.'

"To be sure, doctors and dentists are necessary to the carrying out of the efforts to make our children healthy. But wouldn't it have been the part of modesty and fact for them to remain from the deliberations of such a meeting until time to call them in to remove the tonsils, the adenoids or a loose tooth? And it's the easiest thing in the world to find devastating adenoids or infected tonsils with the expert examiner on the job. We know a movie show ballyhoor in this town who stands out front and spiels the crowds in. And he, too, is ballyhooring for his own show, but he doesn't care who knows it, having no ethical scruples."

Yes, we'll say you were hasty, entire'y too hasty and absolutely unfair to a great profession. In the first place we would remind the World that without doctors and dentists there would be no National Child Health Day; and there would be no Child Health in the modern acceptance, any day, except for doctors and dentists, who, at all times are found promoting child health, for that matter, the health of all the people. Pray, just who, except doctors and dentists appreciate the underlying principles producing bad health, which incidentally lowers the general health of the nation, slowly but surely. Who is responsible, except these, for the high preventative plane and hygienic state of national health today? Who should take the lead in these great moves for betterment except an intelligent and informed medical profession? If such work were left to editors of the type issuing such editorials as above quoted the work would fall flat. "Public school heads, recognized health associations and parent-teacher associations" would certainly waver in helplessness and perplexity if called to meet such situations without the governing mind and experienced hand of an informed medical profession. An honest medical profession has a right to resent the implications in this editorial. Upon a little reflection the reader is amazed and puzzled to know why an alleged great daily would permit such an unfair and senseless editorial to appear in its columns. However, such an unwarranted editorial will not deter any true physician from following the even tenor of his way and continuing, at all times, to extend aid to the helpless and prevent all the woe and misery that it is possible for him to prevent.

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### *Editorial Notes—Personal and General*

DR. R. E. JONES, Seminole, attended the clinics in St. Louis in May.

DR. M. M. CARMICHAEL, formerly of Gage, Oklahoma, has located at Alex.

DR. J. I. DERR, Waurika, has returned from post graduate work in New Orleans.

DR. and MRS. J. I. HOLLINGSWORTH, Waurika, announce the birth of a baby girl, Bobbie Inez.

DR. J. A. MULLER, Snyder, has been appointed physician in the U. S. Veteran's Bureau, and assigned to the Muskogee hospital.

DR. J. L. MINER, Beggs, after studying in the New York Lying-In Hospital, has removed to Tulsa, and will limit his practice to obstetrics.

DR. W. M. CAMPBELL announces the removal of his offices from Vinita to Tulsa, Alhambra Square, 1301½ East 15th Street.

MEDICAL VETERANS of the WORLD WAR held a banquet at Minneapolis Institute of Arts, Monday, June 11th.

DR. CLARK H. HALL and DR. CURT VON WEDEL, Oklahoma City, each read a paper before the Osage County Medical Society at Pawhuska, Monday evening, April 2.

DR. ANTONIO D. YOUNG, Oklahoma City, DR. WILBUR, McAlester, and DR. J. S. FULTON, Atoka, addressed the Seminole-Hughes County Society April 19th.

DR. CARL F. JORDAN, Muskogee County Superintendent of Health, has resigned and accepted a position as professor of hygiene in the University of Iowa.

THE NOBLE COUNTY MEDICAL SOCIETY has been organized with Dr. F. F. Renfrow, Billings, as president; Dr. B. A. Owens, Perry, as secretary-treasurer.

DR. V. C. TISDAL and MISS INA McDANIEL, Elk City, were married May 5th, leaving immediately for New York where they sailed on the Majestic for a four months tour of Europe.

DR. C. E. NORTHCUTT, Ponca City, has returned from a several weeks' trip to Cleveland, Ohio, where he attended the Crite Clinic. He also visited Rochester, Minn., and several other points while on the trip.

DRS. W. H. SHIPMAN, J. G. SMITH, J. V. ATHEY, W. H. KINGMAN, E. E. BEECHWOOD and H. C. WEBER were among the physicians of Bartlesville, who were the guests of the Ponca City Medical Society May 11th.

DR. W. H. WILLIAMSON, 307 Shops Bldg., Oklahoma City, has returned to Sulphur after an absence of two years, in order to give his whole time to the hospital there which he built in 1921. The hospital has been redecorated. All floors have been relaid, and radio head sets are being installed on each bed.

LINCOLN COUNTY MEDICAL SOCIETY met at Chandler, May 2. The members present were Drs. W. H. Davis, A. M. Marshall, A. W. Holland, U. E. Nickell, W. R. Cottrell, R. E. Dickson and J. V. Athey. Drs. Curt Von Wedel, C. P. Bondurant and M. S. Gregory, Oklahoma City, were the principal speakers of the evening.

DRS. T. C. SANDERS, R. M. ANDERSON, J. M. BYRUM and A. C. McFARLING, attended a combined meeting of the Okmulgee-Okfuskee County Medical Societies at Okmulgee, May 7th. Dr. Clinton Smith, Kansas City, conducted a clinic on "Kidney and Bladder Diseases," this being the important subject of the evening's program. Dr. J. S. Fulton, president of the State Medical Association, was present.

KAY COUNTY MEDICAL SOCIETY was host to approximately 100 doctors at their monthly meeting, May 11th, at Ponca City. After dinner the following program was given: "Infant Feeding," Dr. Morton S. Veeder, clinical professor of pediatrics, Washington University, St. Louis; "Heart Diseases in Children," Dr. Hugh McCullough, associate professor of pediatrics, Washington University, St. Louis; "Disturbances of the Ductless Glands," Dr. William Englebach, St. Louis; "Statistics of Pediatrics," Dr. Frederick A. Bolt, professor of pediatrics, University of California, Berkley; "Hospital Care of Infants," Dr. Horton R. Casparis, superintendent, pediatric hospital, Vanderbilt University. Discussions were given by Drs. LeRoy Long, dean of the University of Oklahoma, William Taylor, Carrol Pounders, Harry Turner, J. B. Eskridge and A. D. Young, all of Oklahoma City, and Dr. Reece of Tulsa.

#### DOCTOR CHARLES C. SIMS

Dr. Charles C. Sims, age 52 years, a practitioner of Seminole for the past two years, died suddenly May 9th, in his office, following a stroke of apoplexy.

Dr. Sims was born at Jackson, La., December 26, 1874. He was a graduate of Fort Worth University (now Baylor) Medical Department. His state certificate was issued to him in 1906.

Dr. Sims is survived by his widow and two sons and a daughter. Dr. Sims was a member of the Shreveport, La., State Medical Society, the American Medical Association, the American Legion, Seminole City Medical Association and the Oklahoma State Medical Association.

#### DOCTOR J. E. FARBER

Dr. J. E. Farber, pioneer resident of Cordell and Washita County, died May 10th, in El Reno. Dr. Farber was born at Columbus, Georgia, April 3, 1863. His education was obtained at the State University of Georgia, and at the Atlanta Medical College. His certificate to practice medicine was issued September 10, 1897.

Dr. Farber was one of the earliest citizens or Washita County, coming to Cordell in 1897. He served as County Health Commissioner under the territorial government. He was a prominent member of the Masonic lodge and of the Shrine. Dr. Farber is survived by his wife and two sons.

TRANSACTIONS THIRTY-SIXTH ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, MAY 17, 18, 19, 1928:

#### HOUSE OF DELEGATES

Tulsa, May 17, 1928, 10:00 A. M.

The minutes of the 1927 meeting were read and approved. The credentials commit-

tee called the roll of such delegates as were present, by counties. The proposed Constitution and By-Laws came up for amendment. The constitution was read by Dr. L. S. Willour. After reading it was moved by Dr. A. B. Chase that the Constitution be adopted as read. The motion was adopted unanimously.

Under Article 9, Section 2, the House voted to accept the following of the alternative propositions submitted, "Section 2, The officers, except the Councilors and Secretary-Treasurer-Editor, shall be elected annually. The terms of the Councilors and Secretary-Treasurer-Editor shall be for three years; one third of the members of the Council shall be elected each year. All these officers shall serve until their successors are elected and installed."

Dr. Willour then continued reading of the By-Laws, whereupon Dr. A. L. Stocks moved that the By-Laws be adopted in the form in which they had been previously submitted to the County Societies. The motion carried.

Dr. E. S. Lain then moved that the following amendment be added to Section 7 of the By-Laws: "All receipts accruing from the annual meeting shall be turned over to the Committee on Arrangements and all expenditures made by that committee in connection with the annual meeting must be authorized in advance by the Committee on Auditing and Appropriations. Immediately after the annual meeting the Committee on Arrangements shall forward to the Treasurer any accumulated balance. Any deficit created on account of the annual meeting shall be met by the Council on recommendation of the Committee on Auditing and Appropriations." Accepted and filed for vote within 24 hours.

Telegram was read from the Southern Medical Association extending its greetings and best wishes for a successful meeting.

Committee on Resolutions was appointed as follows: Drs. McLain Rogers, Clinton; F. M. Adams, Vinita; H. Coulter Todd, Oklahoma City.

The report of the Delegates to the American Medical Association meeting, 1927, Washington, was read by Dr. W. Albert Cook. The report was adopted.

Dr. W. Albert Cook moved that the delegates to the American Medical Association be instructed to hereafter file their report as soon as practicable after each meeting of the A. M. A. and that same be published

in the earliest available issue of the Journal. The motion was adopted.

Dr. C. A. Thompson moved that hereafter whenever such action is permissible by reason of time permitting, that the annual report of the Secretary-Treasurer-Editor be published in the Journal preceding the annual session. The motion carried.

The committee reports were submitted as follows:

All written reports will be found reproduced in full in this or the succeeding issue of the Journal).

Cancer, Study and Control. Report by Dr. E. S. Lain. Report adopted.

Medical Defense. A verbal report by L. S. Willour was submitted.

Public Policy and Instruction of the Public. Verbal report by A. L. Stocks, Chairman.

Hospitals. Verbal report by Dr. McLain Rogers, Chairman.

Conservation of Vision. Dr. W. Albert Cook filed his report.

Dr. D. Long, Councilor, read a recommendation from the Council that scientific sections be reduced to three: Medicine, Surgery and Eye, Ear, Nose and Throat. Motion to comply with the recommendation was made and carried.

Dr. G. E. Johnson, Ardmore, moved that the Council be requested to consider the employment of stenographers hereafter, if competent stenographers are obtainable. The motion carried. The House then adjourned to May 18, 1928, at 8:00 A. M.

Tulsa, May 18, 1928, 8:00 A. M.

House met in Assembly Room, Medical Arts Building.

Dr. J. S. Fulton, president, presiding.

The meeting was called to order. The minutes of the meeting of the House of May 17th were read and approved.

The Credentials Committee then called the roll of the delegates present, by counties.

Dr. J. S. Fulton, retiring president, spoke and feelingly thanked the members for their support and cooperation during his incumbency as president. Dr. Fulton then introduced Dr. Ellis Lamb, Clinton, as incoming president. Dr. Lamb then proceeded to call for the election of officers. Drs. G. A. Wall and C. T. Hendershot, Tulsa, were nominated for the office of president-elect. Motion that the nom-

inations close and the ballot be taken. The motion carried.

Drs. Wm. H. Bailey, L. S. Willour and L. C. Kuyrkendall were appointed tellers.

Dr. G. A. Wall received 24 votes and Dr. C. T. Hendershot, 34; whereupon Dr. Hendershot was declared elected as president-elect. Dr. Hendershot was then introduced and made a few remarks, thanking the delegates for the honor conferred.

Delegates to the American Medical Association were elected as follows: Dr. W. Albert Cook, Tulsa, 1929-1930; Dr. Horace Reed, Oklahoma City, 1929-1930. Motion prevailed that these selections be made unanimous.

Telegram inviting the Association to meet in 1929 at Oklahoma City was received from the president of the Oklahoma City Chamber of Commerce.

For meeting places Dr. John Hugh Scott nominated Shawnee, and Dr. A. B. Chase, Oklahoma City. Upon balloting, Shawnee received 20 votes and Oklahoma City, 38, and Oklahoma City was selected.

The following Councilors were elected:

3rd Dist.—Dr. Wm. Gallaher, Shawnee.

5th Dist.—Dr. J. S. Fulton, Atoka.

6th Dist.—Dr. L. S. Willour, McAlester.

8th Dist.—Dr. F. M. Adams, Vinita.

The proposed amendment to Chapter 6, Sec. 7, of the By-Laws then came up for vote. Discussion by Drs. E. S. Lain, J. S. Fulton, Wm. H. Bailey, A. E. Aisenstadt, W. Albert Cook, A. L. Stocks, L. S. Willour and H. C. Todd; and upon vote the proposed amendment was lost.

Dr. J. S. Fulton then moved that it be recommended that hereafter when such financial aid was necessary the Council appropriate from two to three hundred dollars for the purpose of paying necessary expenses of the meeting.

Dr. John A. Haynie moved to table the motion, which motion was adopted.

Committee on Expert Testimony. Reported by Dr. F. M. Adams. Report adopted, motion carried to publish.

Necrology Committee. Verbal report by Dr. Jas. L. Shuler. Dr. A. L. Stock also spoke upon the subject, and in honor of the deceased, recited the following lines:

"Life, I know not what thou art  
But know that thou and I must part  
But when or how or where we meet  
I own to me is a secret yet.  
Life we've been long together  
Through pleasant and cloudy weather  
It's hard to part when friends are dear  
Perhaps 'will cost a sigh, a tear.  
Then steal way, choose thine own  
But say not goodnight and in some better clime  
Bid me good morning."

Resolutions Committee report read by Dr. McLain Rogers.

Dr. W. Albert Cook moved that a committee be appointed to revise Councilor districts. The motion carried.

Dr. Wm. H. Bailey moved that the Council be requested to arrange a meeting of County Secretaries at some future date if found practicable. The motion carried.

Drs. Wm. D. Haggard, Nashville, and Wm. R. Bathurst, Little Rock, telegraphed their regret upon their inability to be present at the meeting.

The House then adjourned.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

### THE COUNCIL

Tulsa, May 16, 1928, 8:00 P. M.

Present: Drs. J. S. Fulton, President; C. T. Hendershot, L. S. Willour, J. H. White, D. Long, H. B. Fuston, A. B. Chase (acting for Dr. Walter Bradford) and C. A. Thompson, Secretary - Treasurer - Editor. The annual report of the Secretary-Treasurer-Editor was submitted, the financial report being read by Hugh A. Lewis, auditor. An auditing committee, composed of Drs. J. H. White, chairman; H. B. Fuston and C. T. Hendershot, was appointed. A credentials committee composed of Drs. J. W. Nieweg, chairman, and W. A. Tolleson, was appointed. The Council then adjourned.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

### THE COUNCIL

Tulsa, May 17, 1928, 7:30 A. M.

Present: Drs. J. S. Fulton, L. S. Willour, D. Long, H. B. Fuston, A. H. Bungardt, A. B. Chase and C. A. Thompson. After discussion it was moved that the Council recommend to the House of Delegates that the number of scientific sections be reduced to three, as follows: Surgery, which shall embrace gynecology and all allied subjects; General Medicine, which shall embrace urology, pathology, bacteriology and all other medical subjects, and Eye, Ear, Nose and Throat.

The auditing committee reported that they had gone over the report and books of the Secretary-Treasurer-Editor and approved the report as filed. The Council adjourned.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

### THE COUNCIL

Tulsa, May 18, 1928, 1:00 P. M.

Present: Drs. Ellis Lamb, President-elect; A. H. Bungardt, J. S. Fulton, D. Long and C. A. Thompson. A general discussion of the various activities of the Association was had. It was tentatively agreed that at some later date there will be held a joint meeting of the county secretaries and officers of the Association if it is determined that such a meeting is feasible. The Council adjourned.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

### GENERAL MEETING

Akdar Temple  
May 17, 8:00 P. M.

Dr. R. V. Smith, presiding.

*Invocation*—Rev. Geo. O. Nichols, Tulsa.

*Address of Welcome*—John D. Finlayson, D.D., Chancellor, University of Tulsa.

*Response*—Dr. Arthur W. White, Oklahoma City.

*Introduction of Incoming President*—Dr. J. S. Fulton, Atoka, retiring President.

*Address*—Dr. Ellis Lamb, Clinton, President.

*Distinguished Guests* participating in the meeting and introduced were:

Drs. John O. McReynolds, Dallas; D. Z. DuNott, Baltimore; Wm. F. Braasch, Rochester; Richard Bolt, Berkeley, California; Col. Roger Brooks, Med. Dept., U. S. A., San Antonio; Clifton F. McClintic, Detroit; LeRoy Long, Oklahoma City.

### OKLAHOMA STATE MEDICAL ASSOCIATION

Annual Report of the Secretary-Treasurer-Editor, Thirty-sixth Annual Session, Tulsa, May 17, 18, 19, 1928.

*To Members of the Oklahoma State Medical Association:*

*Gentlemen:*

In conformity with the requirements of the Constitution and By-Laws, I herewith submit condensed statement of all transactions of my office from May 1, 1927, to April 30, 1928, inclusive.

Detailed statements containing all items of receipts and disbursements, cash books, accounts, duplicate deposit slips and cer-

tificates from officers of the Commercial National Bank, Muskogee, showing the balances of cash and time deposits on hand, have been submitted to the auditing committee of the Council for investigation and report. All items have been certified to by Hugh A. Lewis, Accountant, Commercial National Bank.

#### Membership:

On April 30, 1927, we had 1560 members; on April 30, 1928, we had 1577.

#### Deaths in our Membership:

Since last year's report we have had to report the deaths of the following members:

Dr. Walter L. Anders, Tulsa.  
 Dr. J. L. Austin, Durant.  
 Dr. J. E. Bercauw, Okmulgee.  
 Dr. J. C. W. Bland, Tulsa.  
 Dr. Jas. R. Callaway, Pauls Valley.  
 Dr. A. T. Dobson, Hobart.  
 Dr. R. H. Grasham, Caddo.  
 Dr. James G. Harris, Muskogee.  
 Dr. C. E. Hayward, Wagoner.  
 Dr. Thomas Henderson, Ft. Towson.  
 Dr. J. L. Jeffress, Ada.  
 Dr. F. F. Jones, Pawhuska.  
 Dr. E. A. Leisure, Slater, Mo.  
 Dr. J. H. Maxwell, Oklahoma City.  
 Dr. W. P. Mills, Claremore.  
 Dr. C. M. Morgan, Tuscon, Ariz.  
 Dr. L. S. Munsell, Beaver.  
 Dr. S. A. Rice, Velma.  
 Dr. G. B. Ross, Oklahoma City.  
 Dr. S. S. Sanger, Yukon.  
 Dr. A. M. Sherburne, Cordell.  
 Dr. L. D. Stewart, Perry.  
 Dr. Graham Street, McAlester.  
 Dr. W. B. Wallace, Coalgate.  
 Dr. G. L. Wiles, Stroud.  
 Dr. J. M. Williams, Norman.

#### Medical Defense:

The following are cases pending:

Okmulgee County, No. 8802.

Grady County, No. ....

Kiowa County, No. ....

Oklahoma County, No. 54268.

Seminole County, No. 10563.

Ottawa County, No. ....

A number of notices and applications for defense in addition to the above are on file and pending. Should such cases reach a status of employment of attorneys they will be entitled to fee to the extent of \$100.

#### Journal and Advertising:

This has been the most successful year of our history, and it is felt that we can greatly enlarge our Journal immediately. We have a very well satisfied class of advertisers and this satisfaction arises from the fact that our members give them magnificent support. It is necessary to keep in mind, however, that our advertisers deserve their loyal support.

#### FINANCIAL STATEMENT

Oklahoma State Medical Association  
 Dr. C. A. Thompson  
 Secretary-Treasurer-Editor  
 May 1, 1928

#### Receipts

May 1, 1927, Balance on hand in bank.....	\$ 3,609.66
Advertising and Subscriptions .....	6,842.54
County Secretaries .....	6,518.00
Interest, Time Deposit and Liberty Bond .....	81.25
Sale of Liberty Bond .....	500.00
Exhibits Tulsa meeting (1928).....	60.00
<b>Total .....</b>	<b>\$17,611.45</b>

#### Expenditures

Printing Journal .....	\$ 5,123.79
Office Rent .....	360.00
Office Supplies and Expenses .....	71.49
Telephone and Telegraph .....	76.06
Stamps and Postage .....	210.00
Press Clippings .....	55.00
Treasurer's Bond and Audit of Books.....	45.00
Expenses, Muskogee Meeting (1927).....	170.00
Council and Delegates' Expense .....	744.25
Transfer to Time Deposit .....	2,000.00
Transfer to Medical Defense Fund .....	275.00
Salary, Office and Clerical Work, extra.....	40.00
Salary Mrs. Oltha Shelton .....	925.75
Salary, Dr. C. A. Thompson, Sec-Treas. ....	2,200.00
Salary, Dr. C. A. Thompson, bal. 1927.....	276.34
Refunds .....	16.00
<b>Total .....</b>	<b>\$12,588.68</b>

May 1, 1928, Cash on hand in bank..... 5,022.77

**Total .....** **\$17,611.45**

May 1, 1928 Bal. cash on hand in bank\$ 5,022.77

Time Deposit, Commercial Nat'l Bank  
 (4 per cent) ..... 3,500.00

May 1, 1928, total cash assets.....\$ 8,522.77

#### MEDICAL DEFENSE FUND OKLAHOMA STATE MEDICAL ASSOCIATION

Dr. C. A. Thompson  
 Secretary-Treasurer  
 May 1, 1928

#### Receipts

May 1, 1927, Bal. cash on hand in bank..\$	232.73
Jan. 16, 1928, Okla. State Medical Assn. ....	100.00
Mar. 5, 1928, Okla. State Medical Assn. ....	175.00
Apr. 19, 1928, Interest on time deposit.....	120.00
<b>Total .....</b>	<b>\$ 627.73</b>

## Expenditures

Attorney's fee and legal expense.....\$ 475.00  
 May 1, 1928, Bal. cash on hand in bank 152.73

.....\$ 627.73  
 May 1, 1928, Cash on hand in bank.....\$ 152.73  
 Time Deposit, Commercial Nat'l Bank... 3,000.00

May 1, 1928, Total cash assets .....\$ 3,152.73  
 Total cash assets, Okla. State Med'cal  
 Association .....\$ 8,522.77  
 Medical Defense Fund ..... 3,152.73

May 1, 1928, Grand total cash assets.....\$11,675.50

Respectfully submitted,

(Signed) C. A. THOMPSON,  
 Secretary-Treasurer-Editor.

(Signed): H. A. LEWIS, Auditor.

—o—

## THE COMMERCIAL NATIONAL BANK

Muskogee, Oklahoma

April 30, 1928

Council, Oklahoma State Medical Association:  
 Gentlemen:

This is to certify that our books show the following certificates of deposits issued to the Oklahoma State Medical Association:

No. 17850, dated April 19, 1928, drawing interest from April 19, 1928.....\$ 1,000.00  
 No. 17851, dated April 19, 1928, drawing interest from April 19, 1928..... 1,000.00  
 No. 17855, dated April 19, 1928, drawing interest from March 19, 1928..... 1,500.00

Yours very truly,

(Signed) E. D. SWEENEY,  
 Vice-President.

This is to certify that our books show the following certificates of deposit issued to the Oklahoma State Medical Association on account of Medical Defense Fund:

No. 17853, dated April 19, 1928, drawing interest from March 18, 1928.....\$ 1,000.00  
 No. 17854, dated April 19, 1928, drawing interest from March 18, 1928..... 2,000.00

Yours very truly,

(Signed) E. D. SWEENEY,  
 Vice-President.

## THE COMMERCIAL NATIONAL BANK

Muskogee, Oklahoma

May 3, 1928

Council, Oklahoma State Medical Association:

Gentlemen:

As requested, we beg to advise that at the close of business April 30, 1928, the balance on checking account of the Oklahoma State Medical Association, according to our books, was \$5,022.77.

The balance at the close of business April 30, 1928, on checking account of the Medical Defense Fund, according to our records, was \$152.73.

Yours very truly,

(Signed) E. D. SWEENEY,  
 Vice-President.

## COMMITTEE REPORTS

## COMMITTEE ON RESOLUTIONS

To the President and House of Delegates of the Oklahoma State Medical Association:

We, your Committee on Resolutions beg to submit the following:

(1) WHEREAS, on May 17, 1928, the Almighty in His wisdom, saw fit to remove from our midst, Dr. J. J. Williams of Weatherford, Oklahoma, one of our outstanding citizens, statesmen and physicians, who had rendered such an unselfish service to this state. One of the pioneers in the medical profession, Doctor Williams did a great work in our State Senate, where he was foremost in writing the Medical Practice Act, which constitutes our present status in constructive medical practice in Oklahoma.

In Doctor Williams' death organized medicine has lost one of its most loyal friends and a wise councilors.

BE IT RESOLVED, THEREFORE, that we extend to the bereaved family and to his community our sincere sympathy as we unite with them in sorrow at this great loss.

Respectfully submitted by your committee:

McLAIN ROGERS  
 F. M. ADAMS  
 H. COULTER TODD.

(2) BE IT FURTHER RESOLVED, that in as much as our President, Dr. Ellis Lamb, in his address has brought to our attention the necessity of embodying in our Medical Practice Act the "Basis Science" law, such as adopted by the Medical Association of Arkansas, and several other states, your committee recommends that this body take some definite and immediate steps toward the adoption of a similar law by the State Legislature of Oklahoma.

(3) BE IT FURTHER RESOLVED, that we extend to the Tulsa County Medical Association, and the citizens of Tulsa, our sincere thanks for their hospitality and entertainment during our present sessions.

Respectfully submitted by your committee:

McLAIN ROGERS  
 F. M. ADAMS  
 H. COULTER TODD.

(Approved).

—o—

REPORT OF COMMITTEE ON CANCER  
STUDY AND CONTROL

May 17, 1928.

To the Officers and House of Delegates, Oklahoma State Medical Association, Tulsa, Oklahoma, May 17-19, 1928.

My Dear Fellow Members: We, your committee on Cancer Study and Control, submit the following report for your consideration and action as you may deem wise.

Since our last meeting in May, 1927, there has been nothing, to our knowledge, transpired in the way of research work or new discoveries that is of sufficient importance to have more than ordinary consideration. Research work upon the specific causation, or factors in the cause of cancer, is being prosecuted in a vigorous and encouraging manner in many laboratories in the United States and throughout the world.

Of those who are seeking the truth as regards the part which may be played by heredity in cancer, perhaps Miss Maud Slye deserves first mention. Only recently, when she gave a review of her work with cancerous mice and rats over a period of the past eighteen years, before the American College of Physicians at New Orleans, she received perhaps the greatest ovation of any speaker who appeared upon the program. However, she frankly admits that her work with the lower animals is as yet not positively convincing that the same laws pertain in the human animal.

New treatments for cancer are still being suggested from various parts of the world, though, like all other treatments which have been announced in the past, they appear to lack a sufficient amount of research and experimental work to accept as facts, or they are so fallacious upon their face as to deserve but a passing notice.

One particular treatment we might mention: namely, a solution of colloidal lead which is given intravenously known as the "Blair-Bell treatment for cancer," which has created so much hopeful anxiety among investigators during the past two or three years, we regret to say is still only an experimental treatment for hopeless cases. It is true that many apparently extreme cases of cancer respond to this treatment for a time, though the mortality from lead poisoning and other accidents connected with its administration is so discouraging as to prevent its administration in any except the best equipped chemical and physiological laboratories accessible to a hospital or clinic.

Cancer activity within our own State has consisted of an almost continuous, educational campaign upon cancer which is being done through addresses, free distribution of leaflets and articles upon cancer, in our State Journal and through many newspapers in various parts of our State.

Our State Journal, since our last meeting, has published five original articles on the subject of cancer and one full and very commendable editorial which reviewed the address, resolutions, etc., of the World Conference upon cancer which was held at Lake Mohawk, New York, in 1926.

The Cancer Department of the Oklahoma Public Health Association was, during the past year, furnished a series of sixteen articles prepared by qualified physicians and surgeons selected by the Society for the Control of Cancer, which were first used in an educational campaign in the city and State of New York. It was suggested that they be reproduced in weekly and daily newspapers, if possible, throughout our own and other states. Dr. Carl Puckett, Secretary-Manager of the Oklahoma Public Health Association, very graciously gave of his support in the securing of their publication in approximately 80 or 85 weekly and daily newspapers in various sections of our State. Already encouraging reports have been received from physicians and others as regards the immeasurable value of this public health education. It is impossible at the present time to partially estimate their value in the saving of lives which otherwise might have been sacrificed to this disease.

In closing, may we suggest that we believe the time is now opportune that initial steps be taken by our State Society toward the establishment of a research laboratory and free clinic for cancer patients at some central point in the State. The logical place would be in connection with our State Medical School laboratory and hospital. Of course, such a laboratory and clinic would require a sum

of money for its establishment and operation; however, we believe that if the members of this society will be fully awake to the education of the laity upon such a need, and alert for possible endowment by some kind hearted philanthropist, the time is near at hand when this institution may be a realization rather than a vision or dream.

EVERETT S. LAIN  
L. A. TURLEY  
JAS. C. JOHNSTON,

Committee on Cancer Study and Control.  
(Adopted).

## REPORT OF COMMITTEE ON TUBERCULOSIS

To the Oklahoma State Medical Association, Tulsa, Oklahoma, May 17-19, 1928:

The Committee on Tuberculosis desires to submit for your consideration the following report:

In spite of the recent reduction in the death rate from tuberculosis in the United States, this continues to be the most important of all diseases, still retaining "its age-long appeal because of its wide-spread incidence, its high mortality, its infectious nature, its social and economic significance."

In Oklahoma, with more than two million people, we must not fail to heed this appeal.

What are our resources?

In answer to this question we must place the organized medical profession at the top of the list. The two thousand physicians in the state constitute our chief safeguard. All other organized agencies are either directly or indirectly dependent upon the medical profession.

The Oklahoma Public Health Association, which has been relatively inactive for two or three years, chiefly on account of limited finances, is again in the field with Dr. Carl Puckett as executive secretary. This organization, with all affiliated local tuberculosis societies, should have the loyal support of the medical profession. The chief function of these organizations is educational, and if their work is properly directed it should prove helpful to the local physician, and reflect credit upon his work. Chiefly through the influence of these organizations the child health education is carried on in the schools. This movement will ultimately prove to be one of the chief factors in the further reduction of the death rate from tuberculosis, and should have the hearty support of the medical profession.

Three years ago the National Tuberculosis Association instituted a national play-wright contest to which all high schools in the United States were eligible, the play having to deal with public health. Oklahoma state has won this contest every year.

The Extension Department of the Oklahoma State University has rendered valuable services through the three courses which have been given at the two state institutions, and at the Soldiers' Sanatorium at Sulphur. It would be difficult to estimate the good which is being accomplished through the work of the Extension Department.

The two state sanatoriums are constantly filled to capacity in spite of the fact that we have no definite state-wide plan for case finding. Each of these institutions has about one hundred beds. The sanatorium at Sulphur has 110 beds.

The Committee recommends:

1. That the members of the medical profession give hearty support to the State Public Health Association, and the local Tuberculosis societies.

2. That the family physician should be the most important factor in any case finding scheme, and that he should not only bear in mind the importance of early diagnosis, in order that prevention and treatment may be more effective, but with the recent progress in the treatment of advanced cases he must be prepared to make a discriminating study of such cases with a view of offering every opportunity to the otherwise hopeless sufferer, and the possible control of a prolific source of infection.

3. That the number of sanatorium beds be increased to meet the recommendation of the National Tuberculosis Association, one bed for each annual death. We had 1300 deaths in Oklahoma last year.

4. That general hospitals be encouraged to provide for the reception, diagnosis, and, at least, temporary care of tuberculosis cases.

(a) In justice to the sick.

(8) In fairness to the public.

(c) In order that nurses and interns may become familiar with the diagnosis and treatment of the disease.

5. That each county be compelled to cooperate with the state institutions in the care of their cases, and that they provide funds for their maintenance. If new laws are necessary we recommend that these be referred to the Committee on Legislation.

6. That each county cooperate in the prompt disposal of transient cases because of the menace to others. If it is impossible to place the responsibility upon the community where the patient formerly resided the case should be accepted as a local obligation and handled as such.

L. J. MOORMAN

H. T. PRICE

E. E. DARNELL.

#### REPORT OF DELEGATES TO A. M. A. WASHINGTON, MAY, 1927

The Seventy-eighth annual session of the American Medical Association at Washington, D. C., from many standpoints, was the most interesting that I have ever attended. From the opening session of the House of Delegates on Monday, May 16, to the reading of the last chapter in the last scientific session on Friday, May 20, the attention of the scientific world centered at Washington. The tremendous advance of modern medical science was exemplified by more than one note-worthy report on research and discovery by leading members of our profession. One of the most interesting reports being that before the Section of Ophthalmology by Dr. Hideyo Noguchi, the Japanese, whose report covered his research and discovery of a microorganism in cases of trachoma with which he produced lesions in monkeys that resembled some types of human trachoma.

Washington City, from a political, historical and scenic view-point, is the most interesting city in the United States in which to spend a week, as we are able also, even in so brief a time, to see and learn something of the inner workings of the greatest government in the world.

At the opening session a very constructive address was delivered by Doctor Fred A. Warnshuis, Speaker of the House, who has no superior in the medical profession as an executive officer, and who, no doubt, would be elected president of the American Medical Association should he decline to continue as Speaker of the House.

Dr. Warnshuis stressed the legislative and administrative responsibility of the delegates, individually and collectively, toward the constituency whom we represent. He also emphasized the necessity for standards of qualifications and requirements for surgeons in order that the public may be safeguarded from quacks and charlatans who prey upon the ignorance of the laity.

The address of President Wendell C. Phillips was concise and constructive, setting forth the public health responsibility of physicians. He gave some very pertinent advice along health education lines, and complimented the excellent work being done by our health magazine, Hygeia, which has a wider circulation than any other health magazine published.

The President went into details concerning medical liquors, quoting from several Supreme Court decisions. But as this subject does not enter into the practice of medicine in the State of Oklahoma, I will not discuss it here.

Doctor Jabez N. Jackson, President-elect, embodied, in his address, a reference to the resolution passed last year by the Board of Trustees calling on the Council of Medical Education and Hospitals to make mandatory a course of instruction in the Principles of Medical Ethics in every medical college whose standards are such as to merit recognition and recommended that this resolution have the endorsement of the House of Delegates.

Doctor Jackson called attention to the fact that we are today living in an age of unparalleled commercial progress. Machinery and organization are functioning to create a new civilization—a civilization vastly more complicated—vastly more civilized—and it behooves the medical profession to take full cognizance of changing conditions and make adjustments to such problems as arise.

Doctor Jackson spoke feelingly on the Principles of medical ethics, expressing the conviction that a comprehensive exposition of ethics should be undertaken and that a thorough course of instruction in medical ethics should be instilled in all young men who undertake the study and practice of medicine. With the ideals of the profession thoroughly impregnated in the character of the young man at the beginning of his career his attitude in his relationships cannot fail to be such as to win and hold the confidence of those to whom he ministers. Knowledge is not enough. Knowledge is but a poor servant unless accompanied by wisdom. Education and character must go hand in hand if the ideals of the profession are to be maintained. It therefore becomes obvious that our medical educational system should work to establish and develop character as well as to impart scientific knowledge. Doctor Jackson also referred to our pamphlet on the Principles of Medical Ethics and suggested that a more comprehensive and explanatory manual should be composed—a manual which will translate into the language of the laity and carry to the general public an understanding of the real principles of medical ethics.

I will not bore you with the details of the meetings of the House of Delegates but I would like to call your attention to the report of the Refer-

ence Committee on Medical Education by Doctor William Allen Pusey. The essence of which is to the effect that the population of the United States is increasing much more rapidly than the ratio of physicians, which condition has been brought about more or less as a result of the late war—many young men left their studies to enter the service and never returned. The standard of requirements is very strict now and quite an outlay of time and funds is required for a young man to complete his medical education and equip himself to begin the practice of his profession. But the effect of the present high standards will be in men better qualified now than in former years when the "A" class college work could be completed in four years and an internship was not considered important. It is the duty of the profession to encourage young men to take up the study and practice of medicine, but many who would like to do so find the length of time required to complete the course and the expense connected with it prohibitive.

Doctor Pusey also brought out the point that we are now in an age of specialism and though greater expense to the patient is entailed, a more competent service is rendered and a more direct benefit is derived from the services of a highly trained specialist.

On Tuesday night, May 17, the President of the United States, Calvin Coolidge, conferred on the American Medical Association, as representative of scientific medicine in this country, high praise for its contribution to American Medicine. More than 6,000 persons taxed the capacity of the auditorium in which the meeting was held, and some 5,000 more crowded the adjacent streets vainly seeking admission. On Wednesday afternoon the President of the United States, with his always gracious wife, greeted several thousand physicians, in spite of most inclement weather. The reception being held on the White House lawn. Thursday night the annual reception to the president of the American Medical Association was held at the Mayflower Hotel where the panoply of Washington official life added a resplendent note to the formality of the occasion.

The Oklahoma delegates with the assistance of our State Secretary, Doctor Thompson, did considerable work among the delegates in an endeavor to bring the 1928 meeting to Kansas City. Unfortunately the Missouri delegates seemed not to be imbued with an equal amount of enthusiasm or I am sure it could have been put over. However, it may be to our interest that the meeting did not convene at Kansas City, as at the rate new hotels are being built in Tulsa, we will soon be in shape to invite the Association to come here, as we will be able to provide accommodations for the five or six thousand who attend.

W. ALBERT COOK.

#### REPORT OF COMMITTEE ON MEDICAL EDUCATION

Tulsa, Oklahoma, May 17, 18, 19, 1928.

Based upon the information that we have been able to gather, we are of the opinion that the physicians of Oklahoma are keenly interested in the several phases of medical education.

Obviously, one of the important ways to keep abreast with professional progress is the reading of journals and books, and as we look at it, the

need of the opportunity to have free access to adequate libraries is now one of the most important problems to be solved.

Medical literature of today is so voluminous that it is very expensive for the average physician to have a reference library that would be of service under all circumstances. As a means of solving this problem, your Committee suggests the establishment of reference libraries by the various County Societies. In this way, a County Society would, at a nominal outlay for each member, be able to build a library that would be useful to all the members.

We are advised by the Medical Department of the State University that an arrangement is under way through which a package library will be maintained by the School of Medicine for the use of physicians of the State without any charge at all, with the exception of the carriage charge, packages to be used for a limited time and returned to the library of the School of Medicine. Your Committee believes that this arrangement will offer another important means to keep up with the progress of professional activities.

From an educational point of view, we believe that much of the time devoted by County Societies to scientific work could be used to great advantage in the study and discussion of common every day clinical problems, such study and discussion keeping to the forefront pathological conditions.

It is suggested that County Societies make an effort to secure autopsies when ever possible. There is nothing that will so strengthen the physician in his opinions and findings as to see that the autopsy shows that his deductions have been correct; nor is there any procedure that will make more clear to him that he should exercise greater care and industry than to find that the autopsy does not agree with his conclusions.

We believe that a practical way would be for the County Society to select one or two members who have technical and pathological ability to conduct the autopsies in an orderly, dignified and scientific manner.

It is our impression that the average physician does not keep very accurate clinical records. From a purely educational point of view we believe that to be an unfortunate situation. It stands to reason that when the physician puts down on paper the history and clinical findings they will be put down in much more orderly and consecutive manner. In that way more complete information will be obtained. Again, without such records it is difficult, and usually impossible, for the physician to accurately recall the essential facts in connection with his professional work.

We wish to call attention to the work in medicine by the Extension Division of the State University. Already, groups of physicians in all parts of the State have taken part in these extension courses, and it is our information that the service has been appreciated by the profession generally.

We are distinctly of the opinion that the extension work in medicine is carried forward upon a big professional plane. There are frequent conferences between the dean of the Extension Division of the University and a committee composed of members of the faculty of the School of Medicine, and it is through these conferences that the final plan of procedure is decided, and the proposed instructors approved. Your Committee believes that the work of the Extension Division deserves the confidence and encouragement of the physicians of the State.

The Medical Department of the State University is just completing a building on the School of Medicine campus at Oklahoma City. This building will be ready for occupancy at the beginning of the next term. It will offer increased facilities through which the school will be able to greatly enlarge its classes. There is also being completed a new hospital building (Crippled Children's Hospital) on the campus. This building will have about one hundred and fifty beds, and after its completion the School of Medicine will have under its direct control something over four hundred hospital beds. It is the definite plan of all concerned to create a great medical center in connection with the School of Medicine at Oklahoma City—a center that will offer technical and clinical opportunities to the physicians of the State—and we call attention to these facilities and opportunities in the hope that the physicians of the State will take advantage of them.

Finally, it is the belief of your Committee that we should exercise great care and discrimination in connection with new and spectacular procedures popularized by manufacturers of drugs and apparatus. Some of the new things are of great value; some are useless; some of them may be dangerous. It is only through the application of the fundamentals of educational procedures that they can be properly and definitely classified.

Respectfully submitted,

LeROY LONG, Chairman  
GAYFREE ELLISON  
A. W. WHITE,  
Committee.

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#### REPORT OF COMMITTEE ON CONSERVATION OF OF VISION

Conservation of vision is a vital and absorbing problem to the medical profession and is one in which progress has been as great as along any other line. Much of this progress has been accomplished through the efforts of the medical profession toward education of the laity to the necessity for and advantage to be derived by proper care and attention to the organs of vision.

A few years ago Ophthalmia Neonatorum was not at all uncommon. Now, due to the care given the new born baby by the attendant physician and his instructions to nurse and mother a case is seldom heard of. Through efforts of the medical profession laws have been enacted in a majority of the states making the use of prophylactics compulsory and providing a penalty where a case develops from failure to use such precautions. In many states silver solutions are furnished physicians without cost. School nurses are also doing a vast amount of good and become very proficient in detecting symptoms of infections and by prompt treatment, the spread to others is checked. While the regular vision test made by the school nurse is rather crude, a great many defects are discovered and corrective measures made possible. It is to the interest of public welfare that the difference between the oculist, optician, ophthalmologist and optometrist be made known and the medical profession should regard it as a duty to see that the public is so informed.

Corporations and the industrial world in general are becoming educated to the necessity for eye sight conservation. In many factories and plants rules for the conservation of vision are now conspicuously posted for the information of workers

around lathes and other machinery where there is a possibility of injury to the eyes from small particles of steel, etc. In all instances where the hazard is great, employees are required to wear glasses which, by a special process, have been hardened to such an extent that they are almost unbreakable and sparks from emery wheels will not blister the lenses.

Another marked result of this educational campaign is that modern architecture is taking into account as never before the need for better lighting facilities. This is particularly noticeable in modern designs and construction of school and office buildings and factories, where, as far as possible, lighting effect are designed to fall from the left and back of the student or worker. Practically every step of this progress has been conceived and inaugurated through the efforts of the medical profession. When once the laity is educated to the need of such conservation and becomes conscious of the immense benefit resulting therefrom hearty cooperation follows as a matter of course.

Another matter of importance is protection for the sight of the motorist. When man was created it was not expected that he would travel through the air at the speed of a mile a minute. During the warm season it is the custom of most of us to drive with the wind shield open, exposing the eyes to the mercy of wind and fine dust. This, if practiced for any length of time cannot fail to result in conjunctival irritation. To prevent such, large shaded lenses ground to correct any errors of vision should be worn.

W. ALBERT COOK  
E. S. FERGUSON  
C. S. KYRKENDALL,  
Committee.

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#### REPORT OF COMMITTEE ON EXPERT TESTIMONY

Tulsa, Oklahoma, May 17, 18, 19, 1928.

We, your committee on expert testimony, beg leave to report as follows:

In order that our report may not seem cold, barren and indifferent, we have thought it would be well to have a word of explanation preceding. We have pretty well exhausted the literature on the subject of legal medicine; have tried to find out what they are doing in other states along this line, and invariably we have run up against about the same as we are confronted with as that of our own state—that is, nothing definite has been worked out, through the very fact that the medical and legal professions of the country generally are deeply concerned in this matter leads us to believe that the situation is not without hope and soon some good will result.

It has been suggested in many instances that where expert testimony is desirable, or where a defendant in court enters the plea of insanity, or irresponsibility, that a commission of experts be appointed by the court to inquire into and examine, and report the conditions of such defendant, giving testimony before the jury. This idea no doubt would be ideal, provided, however, the commission of experts could, at all times, properly qualify, but who knows in spite of this, that the commission might not become prejudiced to the detriment of one side or the other—we cannot rule out the human element and its weaknesses.

The old jury system for which much can be

said for and against, is yet with us. It has been tried out through the centuries, and until something better is proposed, it is hard to get away from. Our constitution provides and holds every man innocent until convicted, therefore we cannot see how we could go to court and deprive a defendant of the privilege of employing as many experts as he might see fit.

We all agree that the expert witness, and more especially the so-called alienist, is not every time without his faults, and for this we can blame the medical profession, and it seems to your committee, about the only way out of the dilemma is a campaign of education for physicians and lawyers along these lines. It is deplorable to see doctors and lawyers go into a case against each other, yet without jeopardizing the rights of the defendant in court we hardly know how this can be overcome, except by a better understanding among medical men. Then again, there are many of us who have seen the expert go in the stand, trying to be honest in his convictions, and the first thing is to be confronted with a long hypothetical question, and requested to answer, yes or no. We believe that the hypothetical question should be entirely eliminated; that where medical witness is required to give testimony that he sit in court and hear the evidence, and testify accordingly, leaving out entirely the hypothetical question, and we furthermore believe that the interest of the public and the defendant, would both be better served if a proper fee for the expert witness would be agreed upon by the court, and paid out of public funds.

The popular idea of a commission of experts, either appointed or elected, concerning which there has been much said and written, would at first glance appear as before stated, the ideal. For fear that some member of our own profession might not be entirely familiar with a decision of the Supreme Court of the State of Michigan, in the case of *The People vs. Dickinson* (164 Mich. 148) which we have reason to believe would be interpreted by other courts in the same light, we wish to quote this decision in full:

... wherein the Court found in part as follows:

Brooks, J.—Respondent was convicted of murder in the recorder's court for the City of Detroit, and brings his case to this Court for review. During the trial, it became apparent that the respondent claimed immunity from punishment because of alleged lack of mental capacity. The Court thereupon, acting under the mandate contained in Section 3, of Act No. 175 of the Public Acts of 1905, proceeded to appoint two medical experts. The appointment was made known to the jury, and the experts gave testimony. The experts were appointed, and their testimony received, over the objection of respondent, and exceptions were duly taken. The only question raised upon this record is the constitutionality of the act in question, which is as follows:

"An Act to regulate the employment of expert witnesses.

"Sec. 3. In criminal cases for homicide where the issues involve expert knowledge or opinion the court shall appoint one or more suitable disinterested persons, not exceeding three, to investigate such issues and testify at the trial, and the compensation of such person or persons shall be fixed by the Court and paid by the county where indictment was found, and the fact that such witness or witnesses have been so appointed shall be

made known to the jury. This provision shall not preclude either prosecution or defense from using other expert witnesses at the trial.

"Does the Act violate the provisions of Section 16, Article 2, of the state constitution?"

Section 16 of Article 2, of the Constitution of 1909 (32, Art. 6, Const. 1850) among other things, provides:

"(152) No person shall . . . be deprived of life, liberty, or property without due process of law."

"Due process of law" has been variously defined. Mr. Cooley, in his work on *Constitutional Limitations*, (7th ed. p. 502) adopts the definition given by Daniel Webster in the *Dartmouth College case* 4 Wheat, 519, 4 U. S. (L. ed.) 629, as follows:

"By the laws of the land is most clearly intended the general law, a law which hears before it condemns; which proceeds upon inquiry and renders judgment only after trial. The meaning is that every citizen shall hold his life, liberty, property and immunities under the Protection of the general rules which govern society. Everything which may pass under the form of an enactment is not, therefore, to be considered the law of the land."

This provision of the constitution has been frequently discussed in the decisions of this court. From an examination of the authorities, it is apparent that this constitutional guaranty simply preserves to the people the rights which had existed for centuries, and which had been enjoyed according to the course of the common law. It means such an exercise of governmental power as is sanctioned by settled maxims of law, under such safeguards for the protection of individual rights as those maxims prescribed. It becomes pertinent, therefore, to ascertain what settled maxims and safeguards—what "general rules which govern society"—are applicable to a criminal prosecution such as is here applicable to a criminal prosecution such as is here under consideration. Wherever the common law is in force, the parties to a criminal action have been upon the one side, the other, the accused. In England and her colonies, the Crown (153) or the people, and upon the other, the accused. In England and her colonies, the Crown is represented by an official duly appointed by it, whose duty is to prosecute. In this country, the duties of this official have been assumed and discharged by the prosecuting attorney, who is, himself, a constitutional officer. (Const. of 1909, art. 7, No. 3). From the foundation of our government, it has been the duty of the prosecuting attorney to prepare the case of the people. He, and he alone, must determine what witnesses shall be sworn to establish the case he presents. In case of disability or the necessity for assistance, the statute provided for substitution or assistance as the case may be, upon proper application, but the principle of responsibility remains the same, though the service may, by reason of necessity, be temporarily performed by one clothed with statutory authority. See *Wigmore on Evidence*, No. 1286, and 2483. We think it clear that the preparation for the conduct of the trial on behalf of the people are acts executive and administrative in character. Under our constitution, which jealously separates the powers of government into legislative, executive, and judicial departments, the powers and duties properly belonging to one department cannot, by statutory enactment, be granted to or imposed upon another department.

The power of selecting and appointing witnesses who shall, after appointment, acquaint themselves with the matter in controversy, and testify concerning the same, is, in no sense, a judicial act, and, if exercised by the court in accordance with the mandate of Section 3, would entirely change the character of criminal procedure, and would seriously endanger, if not absolutely destroy, those safeguards which our constitution has so carefully enacted (154) for the protection of the accused. The most cursory examination of Section 3 will disclose its vice. The court is directed to appoint one or more suitable, disinterested persons to investigate and testify. The reasons which impel the court to make the selections are not of record and can never be known. The names of the selected experts cannot be indorsed by the prosecuting attorney as required by law, for he himself is as ignorant of their identity as is the accused. The right of one accused of crime to know in advance the names of the witnesses who will testify against him and to examine into their character, means of knowledge, etc., in order that he may properly prepare his defense, is a right as ancient as our criminal jurisprudence. The court is commanded to make known to the jury the fact of the appointment, and that his appointees have been found by him to be suitable and disinterested. The section then provides that other experts may be sworn by either prosecution or defense.

This is an idle provision, for in the face of the certificate of character, fitness, and ability given to the court experts by the court, experts summoned by either side would receive but scant consideration at the hands of the jury; their testimony would be swept aside in a breath. Juries are most anxious to ascertain the opinion of the court as to the innocence or guilt of the accused, and, ordinarily, more then willing to adopt that opinion as their own. Trial courts, therefore, in doubtful cases, have jealously guarded their own opinions in order that juries might determine controlling facts uninfluenced by the mental attitude of the judge.

The expert witnesses provided for by this section testify under a sanction which gives to their testimony practically the same weight as if it were delivered by the court itself, and if that testimony, being against the accused, were either wilfully false or ignorantly mistaken, its baneful results would be appalling. To give to the testimony (155) of a witness or witnesses this extraordinary certificate of candor, ability and truthfulness, while the other testimony in the case must be judged by the jury by ordinary standards, is to subvert the very foundation of justice. In *People vs. Vanderhoof*, 71 Mich., 158, 39 N. W. 28, this court said:

"The charge of the court virtually put the evidence of these doctors and professors upon a higher plane than the other testimony, which was manifestly wrong."

In *People vs. Seaman*, 107 Mich. 384, 65 N. W. 203, 61 Am. St. Rep. 326, the following language is used:

"An expert witness is to be judged from the same standpoint as any other witness."

In *People vs. Seaman*, 107 Mich., 384, 65 N. W. 501, we said:

"When the question of insanity is to be submitted to the jury, the testimony which is offered to support the claim should be treated with the same respect as that offered to establish any other fact."

We do not overlook the fact that the statute here considered was designed to correct an evil long recognized as tending to bring the administration of the criminal law into disrepute, in cases where insanity is urged as a defense, but we are of the opinion that the true remedy for this evil rests in the development of a livelier sense of responsibility to the public for the proper and decent administration of justice on the part of both the legal and medical professions, rather than in revolutionary legislation. That both professions recognize and deplore the existence of the evil, there can be no doubt, and recent activities in both lend reason for hoping that the scandal which has often attended the introduction of expert testimony will, in the future, cease to be a reproach in the administration of criminal law.

In view of our conclusions upon the second point discussed above, it is unnecessary to give attention to the (156) third ground urged. We must hold Section 3 unconstitutional.

The judgment is reversed, and the respondent remanded to the custody of the County of Wayne, to be tried again.

And, in conclusion, it is encouraging, however, to note that The American Bar Association is also taking cognizance of the needs of reform, and it is hoped that with the cooperation of the American Psychiatric Association and other similar scientific bodies, suitable legislation will at an early date be secured, put into effect and remedy the present situation. In June, 1927, the American Psychiatric Association adopted the report of a committee appointed from that Association to study the whole problem of criminal delinquency. This report so fully embodies our views that we quote it in full:

"The committee respectfully recommends that the American Psychiatric Association pursue the following program:

"(a) That the Association should do the following things:

"(1) It should cooperate with the National Research Council, with the National Committee for Mental Hygiene, with the American Medical Association, with the American Bar Association, with the American Ortho-Psychiatric Association and with the American Institute for Criminal Law and Criminology in further work on this problem.

"(2) It should set up, agree and publish standards, qualifications, of court psychiatrists and psychiatric expert witnesses and cooperate with the American Psychological Association and the American Association of Psychiatric Social Workers in the preparation of similar official standards of qualifications for psychologists attached to court psychiatric clinics.

"(3) It should, at its annual convention, give more attention to psychiatry as applied to crime and other behavior disorders, including demonstrations of practical work being done.

"(4) It should foster an attack on certain pressing problems of research in this field, particularly the working out of a useful nosological classification of mental disorders, which will take into consideration behavior pathology not now definitely defined or classified from a psychiatric standpoint.

"(b) That the American Psychiatric Association should advocate:

"(1) Types of legislation such as the recent Massachusetts enactment, and the expert testimony bill of the American Institute for Criminal

Law, which put the psychiatrist in a position of counselling the legal authorities as to the disposal of social offenders, implying the development of the necessary machinery, court psychiatrist, etc.

"(2) The following proposals of the American Institute for Criminal Law and Criminology with respect to trial procedure:

"(a) That the disposition and treatment (including punishment) of all misdemeanants and felons, i.e., the sentence imposed, be based upon a study of the individual offender by properly qualified and impartial experts, cooperating with the courts.

"(b) That no maximum be set to any sentence.

"(3) The release of prisoners upon parole or discharge only after complete and competent psychiatric examination and findings favorable for successful rehabilitation, to which end the advisability of resident psychiatrists in all penal institutions is obvious.

"(4) The permanent legal detention of the incurably inadequate, incompetent and anti-social offenders, irrespective of the particular offense committed and the development of the assets of this permanently custodial group to the point of maximum usefulness within the prison milieu, industrializing those amenable to supervised employment and applying their legitimate earnings to the reimbursement of the state for their care and maintenance, to the support of their dependent relatives and to the reimbursement of persons injured by their criminal activities.

"(5) The court appointment from a qualified list of psychiatrists testifying in regard to mental status, mechanism and capabilities of a prisoner, with the opportunity for thorough psychiatric examination, using such aids as psychiatrists use in practice, clinics, hospitals, etc., with obligatory written reports and remuneration from public funds.

"(6) The elimination of the use of the hypothetical question and the terms 'insane' and 'insanity' and 'lunacy' and the exemption of the psychiatrist from the necessity of pronouncing upon concepts of religious and legal traditions on which he has no authority or experience such as 'responsibility,' 'punishment' and 'justice.'

"(7) The codification of the commitment laws of the various states. 'Insanity' has come to mean nothing but certifiability, i.e., social desirability of enforced hospitalization. It seems quite unnecessary to have a score of difficult methods for determining the basis for this step.

"(8) The teaching of courses in criminology in both law and medical schools by persons trained both in criminal law and criminal psychiatry."

It will be seen that the report is comprehensive and lends hope, but until this whole matter can be threshed out by these scientific bodies, together with the cooperation of the American Bar Association, we feel that nothing more can be done.

D. W. GRIFFIN, Chairman  
A. D. YOUNG  
F. M. ADAMS.

#### REPORT OF COMMITTEE ON CONTRACT AND INDUSTRIAL PRACTICE

Fred S. Clinton, M.D., F.A.C.S., Chairman  
Tulsa

As outlined in the report of this committee at the 1927 meeting, an effort is being made to secure

a practical and satisfactory solution to the main issues in this problem. A conference was had at the Tulsa May meeting in which were present representatives of the State Federation of Labor, State Medical Association, the State Hospital Association, the Employers of Labor, the Medical Directors of Insurance Company and other physicians and surgeons.

No further report can be made now. Other meetings, the outgrowth of this meeting, are to be held as soon as definite information is obtainable.

June 4, 1928.

FRED S. CLINTON,  
Chairman.

#### EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.  
726 Mayo Bldg., Tulsa

**The Differentiation Between Ophthalmic and Sinus Headaches.** Fenton, R. A. *Ann. Otol., Rhinol & Laryngol.*, 1927, xxxvi, 1000.

Fenton reviews the development, distribution, and physiology of the cerebrospinal nerves of sensation and discusses the various normal and pathological factors exerting an influence upon these nerves.

He states that in the differentiation between ophthalmic and sinus headaches, the patient's personal and family history, the frequency of recurrence of the headache, the patient's occupation, and his exposure to irritants, including climatic influences, must be taken into consideration. The examination should include a search for obstruction to nasal drainage, nasal injuries, inflammation, and oedema, septal and turbinal malformations, allergic and toxic nasal neoplasm, interference with the circulation and lymphatic drainage of the eye, ocular inflammations and oedema, an increase of ocular tension, changes in the media, changes in the retina and nerve, insufficiency of the ocular musculature, and refractive and accommodative errors.

The particular group of nerves which is irritated must be determined. When these are placed at rest the headache will be stopped or at least relieved temporarily. Such rest may be effected by local ischaemia or anaesthesia and the avoidance of specific irritants and irritating tasks.

The headache may be central in origin, with symptoms referred to the eye or nose. It may or may not be relieved by local measures. Eye or nose symptoms may be diagnostic of a cerebrospinal, cardiovascular, gastro-intestinal, or renal ailment. Headache may be psychic, with symptoms referred to the eye or nose.

It must be borne in mind that ocular and sinus headache may exist at the same time, and that degenerative general disorders may increase slight ocular deterioration or nasal stasis into relatively serious complications.

**The Otolaryngological Phase of Focal Infection.** Lyman, H. W. *Ann. Otol., Rhinol & Laryngol.*, 1927, xxxvi, 903.

Focal infections are frequently the cause of general disease. A large majority of foci of infection are found in the ear, nose and throat.

The role of infected tonsils as foci of infection is well known. Adenoids also may harbor infec-

tious pus, and infection of the paranasal sinuses is often a factor in general disease.

The author's experience convinces him that otitis media and mastoiditis in infants may cause grave gastro-intestinal disturbances. Other otologists have reached the same conclusion.

In deafness of a non-suppurative character, the underlying cause is frequently a low-grade chronic infectious process. In the absence of disease of the labyrinth or central nervous system, vertigo is usually due to toxic irritation from an infected focus. Focal infection may cause striking psychic disturbances and is an etiological factor also in arthritis, cardiac conditions, and acute, haemorrhagic nephritis. The author reports two cases of haemorrhagic nephritis in which the eradication of foci of infection was followed by good results.

In certain diseases of the chest, skin, and glandular system, a cure or improvement is obtained from the eradication of foci of infection in the upper respiratory tract.

Attention is drawn to the relationship between acrodynia and infection of the tonsils and adenoids.

**The Varying Symptomatology of Chronic Maxillary Sinusitis Depending on the Pathology Present.**—Emerson, F. P., *Ann. Otol., Rhinol. & Laryngol.*, 1927, xxxvi, 947.

Chronic catarrhal maxillary sinusitis results in thickening of the mucous membrane, which favors virulent infection and the development of empyema. The prominent sign is a persistent unilateral or bilateral mucoid discharge.

Cases of chronic maxillary sinusitis resulting from a suppurative process may be divided into three groups: (1) those showing a thickened membrane and free pus, (2) those showing a thickened membrane and no pus, and (3) those in which the lining membrane is undergoing a degenerative process. In the first group, the common signs are a purulent nasal discharge and pharyngeal irritation. In exacerbations of the chronic process, there may be pain or discomfort over the affected antrum and an increase in the discharge. The discharge varies from a thin foetid secretion to a purulent or muco-purulent discharge. Since the pathological changes are confined to the superficial tissues, secondary involvement of distant organs is not common. Acute exacerbation, however, may be followed by disastrous results. An illustrative case is reported.

In cases of the second group, the relationship of the sinusitis to systemic conditions is often overlooked. Acute exacerbations of the local process may be followed by systemic complications leading to chronic invalidism or death. There is increasing evidence that involvement of the mucoperiosteum in these cases is a menace to the general health. When the mucoperiosteum is involved the entire lining membrane must be removed.

Seven illustrative cases are reported in detail with regard to the symptoms, the pathological changes, and the results of operation.

In the third group of cases there are usually no symptoms until an acute exacerbation occurs. During the acute phase, the symptoms are those of a subacute nasopharyngitis. Usually there is no pain over the affected antrum. Diagnostic lavage of the antrum may show a gelatinous mass

or give negative results. The whole mucosa is undergoing a degenerative change. When acute exacerbations are followed by systemic symptoms, the entire lining membrane must be removed in the quiescent interval. Typical cases are reported.

## TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
912 Medical Arts Bldg., Oklahoma City

**The X-Ray and Clinical Diagnosis of Tuberculosis in Children.**—Henry D. Chadwick, *American Review, Tuberculosis*, April, 1928.

The juvenile type of tuberculosis is a children's disease, sometimes found in adults, which manifests itself by a small, discrete, sharply circumscribed primary lesion, accompanied by much greater involvement of the tracheobronchial lymph nodes.

In the X-ray slight changes in area or of density of the hilum shadows are of no significance, but if there appear spots of increased density, with irregular outlines in the region of the normal hilum shadows, or along the trachea, that have the form of lymph nodes, or lymph node masses, then we are justified in assuming such shadows to be due to calcified tuberculous lymph nodes.

Tuberculin tests are rarely negative when calcified nodules, or lymph nodes are found in the roentgenograph. Tests that are negative in a suspected case should be repeated with increasing doses intracutaneously.

History of exposure plays an important role. In the Massachusetts State Clinics, 48 per cent of the six-year-old children, said to be contacts, were reactors, and but 15 per cent of the non-contacts of the same age.

Physical signs are few and none are pathognomonic. Sometimes one may find interscapular dullness, which is probably the result of muscular spasm due to inflamed mediastinal lymph nodes. Pleurisy with effusion must be considered. Undue fatigue, nervous irritability and frequent colds are the most common symptoms. Fever over 100 is unusual.

**Rales in the Diagnosis of Pulmonary Tuberculosis.**—Fred H. Heise, *American Review, Tuberculosis*, April, 1928.

This is an analysis of 1877 individuals who were examined for entrance into Trudeau Sanatorium. There were 351 minimal cases, almost all of which showed definite X-ray changes, but only 145, or 41 per cent, were found to have definite or questionable rales upon first examination; 59 per cent had no rales.

In 1299 moderately advanced cases, 980, or 75 per cent had rales. About one-fourth would have missed diagnosis had the occurrence of rales alone been the criterion of diagnosis. In 227 far advanced cases, 203, or 89 per cent, had rales.

Certainly it cannot be gainsaid that the absence of rales should not be used as the sole criterion for the absence of pulmonary tuberculosis. In that stage of pulmonary tuberculosis, most amenable to treatment, and of most value to detect, rales were absent in more than one-half of the subjects examined. In the detection of early pulmonary tuberculosis stereoscopic X-ray films should always be taken.

### Rales in the Prognosis of Pulmonary Tuberculosis.—Fred H. Heise.

When rales decrease or disappear the X-ray shows improvement, so that the changes are more or less parallel. However, when rales develop or increase in area this does not hold true, for more than three-fourths of such instances are accompanied by improvement or a stationary condition in the X-ray; nor is it substantiated by the fact that rales, which do not change over a period of time, mean an unchanging focal condition as determined by the X-ray. The majority of such patients undergoing treatment show actual improvement in the X-ray film.

### Artificial Pneumothorax at the Loomis Sanatorium—A Clinical and Statistical Study.—Andrew Peters, American Review, Tuberculosis, April, 1928.

A series of 273 patients to whom therapeutic pneumothorax was administered, or attempted, during the years 1911-1923 inclusive, is reported with particular attention to end results as determined up to July 1, 1925, with the aid of a comprehensive follow-up system for discharged patients.

From 1918 on, about three times as many patients as formerly have received this treatment and for longer periods. In the earlier group extremely unfavorable cases predominated and a satisfactory collapse, more or less effective or temporary, was obtained. Extreme chronic cases and desperate last resort cases are unlikely to obtain a satisfactory collapse — was often less secured.

The entire series contains at least 85 per cent of far advanced cases and 32 per cent of desperate last resort cases.

About one-third obtained a satisfactory collapse and in about 20 per cent it was found impossible to induce pneumothorax. In the remainder various degrees of collapse, more or less effective, or temporary, were obtained. Extremely chronic cases and desperate last resort cases are unlikely to obtain a satisfactory collapse.

Half of the cases had pleuritic complications, serious pleurisies being most common. The more serious complications were most frequently associated with the more serious types of disease and those in which pathological conditions prevented a satisfactory collapse. Severe pleurisies occurred in nearly one-third of the cases. Purulent pleurisies occurred in 11.5 per cent of the cases, but less frequently in those with a satisfactory collapse. Septic pleurisies and broncho-pleural fistula occurred in less than 5 per cent of the cases.

Progression of disease in the contralateral lung has been recorded in about 75 per cent of the cases, and improvement in about 7 per cent, leaving about two-thirds in statu quo. Only a minority of the cases were clinical unilateral.

The results obtained vary greatly with certain factors, most important of which is the obtaining and maintaining of a satisfactory collapse of the diseased areas for a sufficient period of time. Tubercle bacilli permanently disappeared in 35 per cent and almost 25 per cent remained in satisfactory condition at the end of 2 to 14 years.

Of all patients in whom pneumothorax was induced, 42 per cent were living at the end of 2 to 14 years, and 24 per cent were reported in satisfactory condition. In the group with satisfactory

collapse 61 per cent were living and 45 per cent reported in satisfactory condition. Of those in whom pneumothorax was impossible, 23 per cent were living and 15 per cent reported in satisfactory condition. Patients of very chronic type and those with incompletely effective collapse, thoracoplasty should probably be preferred. The striking effect of a satisfactory collapse was in bringing about the disappearance of tubercle bacilli from the sputum.

The important point is, do not wait too late if the disease progresses and response to rest and ordinary methods of treatment is unsatisfactory. In the words of Claude Riviere, "No more hopeful ray of sunshine has ever come to illumine the dark kingdoms of disease than that introduced into the path of the consumptive through the discovery of artificial pneumothorax."

### Light in the Treatment of Tuberculosis.—E. S. Bullock, American Review, Tuberculosis, April, 1928.

The author holds that sunlight is of little or no benefit in pulmonary tuberculosis, but air-baths are of great importance and he thinks the time will come when, in favorably located institutions at all times of the year and in other less favorably situated, parts of the year, our tuberculous patients will be stripped of clothing, all but a breech-cloth, and be exposed to the moving air.

He feels that at the present time light is being most unscientifically and often carelessly applied, and we are only saved from disastrous results in many instances by nature's ability to protect us from the bad effects by the deposit of pigment.

Chemical light should be used only under direct medical supervision. At this stage of knowledge even physicians know so little about the application of radiations that they should be very careful indeed until time has better defined the limit of their usefulness.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
717 North Robinson St., Oklahoma City

Gentil, F., and Bonneau, R.—Correction of the Angulation of Fractures by Means of A Metal Wire (Correction de l'angulation des fractures par l'action d'un fil metallique). Arch. franco-belges de chir., 1925, xxviii, 575.

The procedure described in this article was originated by DePage during the war. DePage used it in cases of open fractures in which opposition could not be obtained by other means and screwing and plating were contra-indicated. Since the war, it has been employed by other surgeons for both open and closed fractures. In fractures with a deviation of the fragments which gravely compromises the function of the limb and cannot be corrected by external means, two alternatives are offered—the application of a splint to be left in the wound temporarily or permanently or the employment of an apparatus which emerges from the wound and by which the necessary corrections can be made. The second procedure is represented by the use of Malgaigne's book in fracture of the patella.

In the method discussed in this article, long wires are screwed onto the bone fragment perpen-

dicular to its axis and fastened firmly to an external bar which gives stability. In the DePage procedure the wire is simply hooked around the ends of the fragments and then attached to the external splint.

In open fractures advantage is taken of the wound already present. If this is not directly over the fracture or does not give direct access to it, a separate incision must be made. The wire is passed as close to the bone as possible by means of a large curved needle.

The point of exit of the wire depends upon the type of the displacement. As a rule, it is opposite to the angle of the deviation. When the wire comes out on the anterior surface of the limb, the situation is ideal as the bone or limb can be swung as in a hammock. All important vessels, tendons, and nerves must be guarded against pressure or cutting by the wire. When the involved bone is small and the two leads of wire running from it occupy too much space, the wires may be twisted together at the bone surface and brought out as one wire.

The wire leads may be attached to a hollow threaded bolt which can be turned up to keep them taut and the bone in place. This type of wire support can be used for a bone broken in more than one place. If the point of bone is thin or spiral and there is danger that the wire may slip off during healing or during traction, the wire may be held in place by passing it through a hole drilled in the bone. Suspension traction or Carrel-Dakin treatment can be carried out with this method.

Wire suspension has been used in gunshot fractures, open and possibly septic fractures with malposition, old infected fractures with malunion and osteomyelitis, and closed fractures. In septic fractures, the reduction thereby effected improves the vitality of the tissues and favors drainage. In cases of closed fracture the method is rendered possible by making an incision before the surrounding tissues become macerated by extravasation.

The time at which the wire is withdrawn depends upon the time required for the union of the bones. The solidity of the callus may be determined by observing the fracture through the fluoroscope when the tension on the wire is loosened. One lead of the wire is cut and the wire is pulled out by the other end.

The authors report in detail eight cases of open fracture of the lower end of the femur due to gunshot wounds, one case of fracture of both bones of the leg, and four cases of fracture of both bones of the forearm which were treated by the method described. In all, the results were very satisfactory.

**Thomas, T.T.—Recurrent Dislocation of the Shoulder.**—*J. Am. M. Assn.*, 1925, lxxv, 1202.

Normal abduction of the shoulder is limited by the axillary portion of the joint capsule. The cause of anterior dislocation is forcible hyperabduction producing a tear through which the humeral head protrudes into the axilla. If abduction of the arm occurs before cicatricial healing is complete, the scar stretches or a new tear occurs. A new dislocation then results from less force than was necessary to produce the original dislocation. When the dislocation occurs repeatedly, the capsule is prevented from contracting to its normal length.

Assuming that recurring dislocation of the shoulder is due to a hernial pouch of the axillary portion of the capsule, Turner believes that for a radical cure, this pouch must be removed. He states that the operation of passing a flap of the deltoid muscle under the head and neck of the humerus close to the axillary portion of the capsule is effective, not because of the support it gives the humeral head, but because of a cicatricial contraction of the axillary portion of the capsule.

Thomas emphasizes the fact that if a dislocation occurs in a non-epileptic patient after operation, it is not necessary to perform a second operation, because, if the arm is held in the Velpeau position for four or five weeks, the capsule will be greatly strengthened by the new cicatricial tissue developing at the site of the new tear.

Thomas has operated upon fifty-seven shoulders—thirty-nine in non-epileptic patients and eighteen in epileptic patients. In all except one of the non-epileptic cases—the one exception being a very early case—a single capsularrhaphy was done. In twenty-two of the cases there has been no dislocation since the operation. The first patient was operated on seventeen years ago and the last one six months ago. In seven cases, dislocation has occurred, once since the operation, and in one case twice. In two cases the operation failed.

In ten of the eighteen epileptic cases, there was no recurrence of the dislocation after a single capsularrhaphy. In two cases, it recurred after two capsularrhaphies.

—o—

## BOOK REVIEWS

**PRINCIPLES AND PRACTICES OF OBSTETRICS**, By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. Fifth edition, thoroughly revised. Large octavo of 1140 pages, with 1128 illustrations, 201 in colors. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$12.00 net.

Since the first edition in 1913, DeLee has been an authority on matters pertaining to obstetrics. The author states that in this fifth edition his difficulty has been to keep the material within the limits of one volume. In this issue the text and illustrations have been carefully revised. The chapters on "Hyperemesis," "Eclampsia," "Abruptio Placentae," "Placenta Praevis," "Ruptura Uteri," "Postpartum Hemorrhage," "Breech Presentation," and the operation of forceps have been almost rewritten and new illustrations supplied. The chapter on forceps was much enlarged and newly illustrated to show the great artistry that can be attained with the ancient instrument. The illustrations are very fine and of course the work is the last word in proper obstetric technique management.

**LOCAL ANESTHESIA** by Geza de Takats, M.D., Asst. Prof. of Surgery, Northwestern University, School of Medicine, Chicago, Ill., with an introduction by Allen B. Kanaval, M.D., Prof. of Surgery, Northwestern University Medical School. Octavo of 221 pages with 117 illustrations. Cloth, \$4.00. Philadelphia and London: W. B. Saunders Company, 1928.

Local anesthesia has in the last few years robbed surgery of many of its dangers. Today

thousands of operations, which a decade ago were being performed under ether and other general anesthetics, are today being performed painlessly, with little or no risk or no risk to the patient, under local, regional and intraspinal anesthesia. In some hospitals the rule is, now, to at least begin abdominal and practically all surgical work on the extremities with local anesthesia.

This work is a very fine exposition of the technique of local anesthesia. We only regret that it is not more voluminous.

**BEDSIDE DIAGNOSIS**, by American Authors, edited by George Blumer, M.D., Clinical Professor of Medicine, Yale University, School of Medicine, attending Physician to the New Haven Hospital. Three octavo volumes, totalling 2820 pages, containing 890 illustrations. Philadelphia and London: W. B. Saunders Company, 1928. Cloth \$30.00 a set. Separate desk index volume free.

This is one of the most remarkable works recently produced in modern medicine. Professor Blumer has been one of the leaders and directors of thought in American medicine for years, and in this work has surrounded himself by well known authorities and masters of medicine. The work fully appreciates the constantly arising new methods, the tendency to overrate these, and at the same time discard those well tried and proven procedures in diagnosis. Feeling that the time will never be when the senses will cease to be the most important factor in diagnosis he feels the importance of stressing methods of observation, which can be made without the assistance of the laboratory. This does not mean that the laboratory is to be discarded by any means, for it is realized that for all time the laboratory will be of the greatest aid in arriving at correct diagnosis. Notwithstanding the great reliance placed, and rightly, upon laboratory methods and findings, the bedside and clinical observation cannot be ignored. This work undertakes to, and does stimulate the natural powers of observation, without which the art of diagnosis will surely degenerate into worthlessness.

The title "Bedside Diagnosis" has been chosen in an attempt to place proper value upon observation on the part of the physician, together with the use of the simpler diagnostic aids always to be found in his ramamentarium.

These volumes have only to be seen to be appreciated. They are finely illustrated and the text contains reference to every known disease, this to such an extent that the work is almost encyclopedic in character. For instance nine pages are devoted to Tularemia, a disease not recognized as a rule by the American profession, yet it daily is apparently growing commoner. The article on pulmonary tuberculosis is remarkable for its clarity, accuracy and good sense. The general and below average practitioner throughout the country would be improved upon reading and reflecting upon the article. Space prohibits mention of the vast array of subjects considered. So we can only say that every physician should inspect the remarkable work in order to fully appreciate its scope.

#### KANSAS CITY SCIENTIFIC EXHIBITS

Scientific exhibits, while forming one of the great educational factors of any medical gathering, are, ordinarily, confusing in the wealth of

material presented, and quite often exploit the individual exhibitor and his work to the detriment of real cohesive educational value. In this regard the arrangement of the scientific exhibits for the Annual Fall Conference of the Kansas City Southwest Clinical Society is to be especially commended.

The following symposia have been arranged for the general program:

Feeding Problems in Children.  
Diseases of the Gall Bladder.  
Special Problems in Obstetrics.  
Surgery of the Prostate.  
Peptic Ulcer.  
Traumatic Surgery.

The various specialties which touch upon these subjects will group their scientific exhibits, and general order of the exhibit will follow in sequence parallel to that of the general program. As an example, the subject of "peptic ulcer" will be dealt with from the standpoint of the scientific exhibit as follows:

1. By the clinician, including the laboratory experience, charts of chemistry and graphic illustration of the chemical factor to be considered in peptic ulcer.
2. Peptic ulcer from the standpoint of radiology. Their classification, routine, special methods of recognition and evaluation
3. From the standpoint of treatment, both medical and surgical, with a graphic representation of the end results to be expected, by both medical and surgical treatment of the lesion.

The various subjects will be dealt with in a similar manner as the example described above, the total effort being to construct a scientific exhibit which will graphically portray the lesson intended by the exhibitors.

#### A CONCENTRATED AND REFINED TETANUS ANTITOXIN

The fact that tetanus antitoxin, when administered for the relief of a case of developed tetanus, must be given in doses of 20,000 units or more makes the question of concentrating the bulk of the serum to the smallest possible dimensions a very urgent one. This is true whether the antitoxin is administered intravenously, when of course no blood need be withdrawn, or intraspinally, when room must be made in the cord for the dose, and especially when the volume to be administered is considerable.

Biological manufacturers have eliminated one ingredient after another of the antitoxic serum, to reduce its bulk without rendering it too viscous for prompt assimilation. The serum albumin was first thrown out, then a fair proportion of the euglobulin, without in any way effecting the specific activity of the residue—thus proving that the antitoxic principle is neither protein nor true globulin, and that these ingredients of native serum only complicate serum therapy.

The tetanus antitoxin now supplied by Parke, Davis & Co. is characterized, the manufacturers claim, by small volume, water-white appearance, and comparative freedom from anaphylactogenic constituents. A booklet on this subject has just been issued by the manufacturers.

## DIATHERMY IN GYNECOLOGY

Diathermy is used in gynecology for four different groups of indications: pelvis inflammations, gonorrhea, noninfectious gynecologic conditions and cancer of the uterus. George Gellhorn, St. Louis (Journal A. M. A., March 31, 1928), discusses each of these items. As with all other therapeutic methods, the results depend, to a large extent, on the proper technic. The proper selection of cases for this treatment is of the greater importance. Only an uncritical enthusiasm can regard diathermy as a panacea. There is no cure-all and there never will be. The advent of diathermy has not rendered older methods of treatment obsolete, and the best results will be accomplished by him who combines this new therapy with other tried means by which the defensive apparatus of the body is stimulated to energetic action. In the realm of gynecology the application of high degrees of heat by means of diathermy has led to the development of several important and promising methods of treatment of various pathologic conditions. For the present, practical experience has been accumulated in the therapy of chronic pelvic inflammations, gonorrheal infection of the urethra and cervix, cancer of the uterus, and several minor gynecologic ailments. The pleasing results should not, however, obscure the fact that the new method is only in its infancy, and that a great deal of further careful clinical observation is needed to establish the possibilities and limitations of this new approach. Just because heat of such intensity is a powerful curative agent, it is also capable of causing considerable harm, and it behooves gynecologist to wield it cautiously and judiciously.

## METALS IN OUR FOOD

The metals commonly used in the manufacture of cooking utensils, are iron, copper, tin, aluminum and nickel. Whether these dissolved metals in food produce chronic poisoning over a long period of exposure is the problem that was studied by F. B. Flinn and J. M. Inouye, New York (Journal A. M. A., March 31, 1928). Copper, zinc,

manganese, iron, aluminum, nickel and cobalt are commonly found in plant and seal food. Lead, a recognized body toxicant, is not. Copper, zinc, manganese, tin, iron and aluminum are generally present in the human body, but with the exception of iron do not have any known function in the vital economy of the organism. Copper, nickel, tin and aluminum are practically all eliminated in the stools; the excretion of zinc is divided equally between the urine and the stool. Metallic salts ingested with food combine with the proteins of the food and are rendered harmless except when the metallic salt is present in excessive amounts, or perhaps in cases of hyperacidity. All metallic salts ingested during the absence of food in the stomach have a deleterious effect. Copper, nickel, zinc, tin and aluminum are all attacked by acids or alkalis during the cooking process, the amount dissolved depending roughly on the acidity or alkalinity of the food. All foods having a metallic taste from these dissolved metals are unpalatable and irritate the gastro-intestinal tract. Animals will not ingest large amounts of copper and nickel salts in one dose. If the same amount is mixed with the food and fed throughout the day, the animal will ingest it without discomfort or ill effect. Animals can ingest relatively larger amounts of tin, zinc or aluminum salts in single doses. Copper, zinc, aluminum and nickel are not classified as industrial poisons because of the absence of any evidence of chronic or acute poisoning in industrial plants. Nickel poisoning has been reported from nickel carbonyl. There is no scientific evidence of any chronic poisoning taking place from food cooked in aluminum utensils. Large doses of aluminum salts, like copper and nickel, will cause gastro-intestinal disturbances when excessive amounts are dissolved. Tin apparently does not affect the human system, but because of its cost its use in cooking utensils is prohibitive.

## OPERATION FOR BOW-LEGS; SUBSEQUENT GANGRENE AND AMPUTATION

William H. Van Doren and Paul B. Magnuson, Chicago (Journal A. M. A., Feb. 18, 1928), publish a statement relative to the case of a girl operated on presumably for the correction of bow-legs by Dr. Schireson, concerning whose record an editorial appeared in The Journal, February 4, page 387.

## Report of Examination for Licenses to Practice Medicine

Report of Oklahoma Board of Medical Examiners, held in Tulsa, May 17th, 1928; number of subjects examined in, 12; total number of questions, 120; percentage required to pass, 75; regular school of practice, and licensed by written examination.

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address
Butler, Hull Wesley	1880	No. Kempton, Ind.	Tulane Med.	1922	New Orleans, La.
Cunningham, Wm. Ralph	1872	Volant, Pa.	Univ. of Mich.	1899	Hockerville, Okla.
Hale, Pride Edgar	1897	Red River, Texas	Univ. of Louisville	1924	Amarillo, Tex.
Hutchinson, David A.	1848	Dadeville, Ala.	P. & S. Baltimore	1880	Nashville, Ark.
Jeffery, Vogel Joseph	1901	Melbourne, Ark.	Univ. of Ark.	1927	Enid, Okla.
Mann, Frederick Philip	1878	St. Louis, Mo.	St. Louis Univ.	1904	Enid, Okla.
Nelson, Marque Ovid	1897	St. Paul, Minn.	Univ. of Minn.	1923	Rochester, Minn.
Simpson, Carl Franklin	1900	Marietta, Ohio	Univ. of Louisville	1926	Tulsa, Okla.
Venable, Douglas R.	1892	Sherman, Texas	Univ. of Texas	1916	Tulsa, Okla.
Ware, Thomas Hendrix	1885	Texas	Memphis Hosp. Col.	1912	Seminole, Okla.
Wilson, Edwin Barrett	1891	Kentucky	Univ. of Penn.	1915	Mt. Vernon, N. Y.

# R O S T E R

## OKLAHOMA STATE MEDICAL ASSOCIATION

### 1928

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R. M. Church .....	Stilwell
B. F. Collins .....	Claremore
Jos. A. Patton .....	Stilwell
E. E. Poyner .....	Stilwell
I. W. Rogers .....	Stilwell
R. L. Sellers .....	Westville

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Z. J. Clark .....	Cherokee
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G. G. Harris .....	Helena
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L. T. Lancaster .....	Cherokee
H. A. Lile .....	Cherokee
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H. R. Shannon .....	Goltry
A. G. Webber .....	Goltry
H. M. Wheeler .....	Helena

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C. C. Gardner .....	Atoka
L. E. Gee .....	Stringtown
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W. W. Fox .....	Carrier
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E. S. Kilpatrick .....	Elk City
J. E. Levick .....	Carrier
R. C. McCreery .....	Erick
W. D. Oliver .....	Erick
Thos. D. Palmer .....	Elk City
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M. Shadid .....	Elk City
H. K. Speed .....	Sayre
W. P. Spence .....	Sayre
G. H. Stagner .....	Erick
J. E. Standifer .....	Elk City
O. C. Standifer .....	Elk City
DeWitt Stone .....	Sayre
V. C. Tisdal .....	Elk City
W. C. Trelkeld .....	Sweetwater
J. D. Warford .....	Erick
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W. F. Griffin .....	Watonga
Geo. M. Holcomb .....	Okeene
J. B. Leisure .....	Watonga
L. H. Murdock .....	Okeene
A. F. Padberg .....	Canton

#### BRYAN COUNTY

D. Armstrong .....	Durant
*J. L. Austin .....	Durant

\*deceased.

W. G. Austin .....	Mead
J. A. Bates .....	Seminole
P. L. Cain .....	Albany
Roy L. Cochran .....	Caddo
B. B. Coker .....	Durant
J. T. Colwick .....	Durant
C. D. Dale .....	Durant
W. P. Dickey .....	Kenefick
H. B. Fuston .....	Bokchito
*R. H. Grassman .....	Caddo
C. J. Green .....	Durant
John A. Haynie .....	Durant
W. A. Houser .....	Durant
F. M. Jackman .....	Mead
R. A. Lively .....	Durant
D. C. McCalib .....	Utica
W. H. McCarley .....	Colbert
C. F. Moore .....	Durant
C. G. Price .....	Durant
H. P. Pope .....	Caddo
S. W. Rains .....	Aylesworth
H. C. Ricks .....	Box 1237, Oklahoma City
G. M. Rushing .....	Durant
R. E. Sawyer .....	Durant
J. L. Shuler .....	Durant
O. E. Stringer .....	Achillee
C. E. Wann .....	Albany
A. J. Wells .....	Calera
John T. Wharten .....	Durant
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B. D. Brown .....	Apache
I. S. Butler .....	Alfalfa
Geo C. Campbell .....	Anadarko
Sam'l C. Campbell .....	Tuba City, Ariz.
J. H. Cantrell .....	Carnegie
I. Ross Clark .....	Carnegie
Geo. B. Coker .....	Cyril
F. Dinkler .....	Ft. Cobb
W. L. Dixon .....	Cement
Edw. W. Downs .....	Hinton
C. P. Gillespie .....	Anadarko
W. T. Hawn .....	Binger
E. W. Hawkins .....	Carnegie
J. J. Henke .....	Hydro
A. F. Hobbs .....	Hinton
Chas. R. Hume .....	Anadarko
E. L. Inman .....	Apache
R. E. Johnston .....	Bridgeport
W. W. Kerley .....	Anadarko
P. L. McClure .....	Ft. Cobb
C. B. McMillen .....	Gracemont
C. N. Meador .....	Anadarko
W. B. Putman .....	Carnegie
R. D. Rector .....	Anadarko
E. W. Rogers .....	Carnegie
C. A. Smith .....	Ninton
A. H. Taylor .....	Anadarko
Wade H. Van .....	Cement
R. W. Williams .....	Anadarko
S. E. Williams .....	Hydro

\*deceased.

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Jesse Bird .....	Calumet
H. C. Brown .....	El Reno
W. B. Cato .....	El Reno
H. A. Dever .....	El Reno
G. L. Goodman .....	Yukon
P. F. Herod .....	El Reno
A. F. Hocker .....	El Reno
A. L. Johnson .....	El Reno
Thos. Lane .....	El Reno
W. P. Lawton .....	El Reno
J. W. Muzzy .....	El Reno
P. B. Myers .....	El Reno
J. T. Phelps .....	El Reno
D. P. Richardson .....	Union City
J. T. Riley .....	El Reno
*S. S. Sanger .....	Yukon
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F. W. Boadway .....	Ardmore
J. L. Cox .....	Ardmore
S. DePorte .....	Ardmore
A. Y. Easterwood .....	Ardmore
O. J. Gee .....	Ardmore
L. D. Gillespie .....	Berwyn
Walter Hardy .....	Ardmore
F. A. Harrison .....	Ardmore
W. G. Hathaway .....	Lone Grove
R. H. Henry .....	Ardmore
H. A. Higgins .....	Ardmore
J. T. Hines .....	Earlsboro
T. J. Jackson .....	Ardmore
C. A. Johnson .....	Wilson
G. E. Johnson .....	Ardmore
W. M. Johnson .....	Ardmore
O. A. Kirby .....	Marietta
J. R. McCracken .....	Wilson
J. C. McNeese .....	Ardmore
J. R. Pollock .....	Ardmore
W. C. Sain .....	Ardmore
J. W. Shelton .....	Ardmore
E. E. Shivers .....	Wilson
R. C. Sullivan .....	Ardmore
L. B. Sutherland .....	Wilson
Dow Taylor .....	Woodford
F. P. Von Keller .....	Ardmore
L. B. Woods .....	Wilson

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Swartz Baines .....	Tahlequah
A. A. Baird .....	Tahlequah
T. J. Bond .....	Tahlequah
P. H. Medearis .....	Tahlequah
J. M. Thompson .....	Tahlequah

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E. R. Askew .....	Hugo
J. F. Gee .....	Hugo
C. H. Hale .....	Boswell
K. P. Hampton .....	Seminole
G. E. Harris .....	Hugo
*Thos. Henderson .....	Ft. Towson
W. N. John .....	Hugo
E. A. Johnson .....	Hugo
J. S. Miller .....	Hugo

\*deceased.

J. D. Moore .....	Hugo
R. J. Shull .....	Hugo
Reed Wolfe .....	Hugo

## CLEVELAND COUNTY

C. S. Bobo .....	Norman
I. T. Bond .....	Norman
T. M. Boyd .....	Norman
Arthur Brake .....	Norman
G. M. Clifton .....	Norman
B. H. Cooley .....	Norman
J. L. Day .....	Norman
T. J. Dodson .....	Norman
Gayfree Ellison .....	Norman
J. J. Gable .....	Norman
D. W. Griffin .....	Norman
F. E. Hilysmeyer .....	Norman
H. B. Kniseley .....	Norman
J. B. Lambert .....	Lexington
R. D. Lowther .....	Norman
W. T. Mayfield .....	Norman
Iva C. Merritt .....	Norman
Gertrude Nielsen .....	Norman
Chas. Rayburn .....	Norman
Mary T. Roudebush .....	Norman
Carl Steen .....	Norman
E. F. Stephens .....	Norman
R. E. Thacker .....	Lexington
J. M. Thuringer .....	Norman
L. A. Turley .....	Norman
G. W. Wiley .....	Norman
*J. M. Williams .....	Norman

## COAL COUNTY (See Atoka)

Frank Bates .....	Coalgate
J. B. Clark .....	Coalgate
H. G. Goben .....	Lehigh
*W. B. Wallace .....	Coalgate

## COMANCHE COUNTY

H. A. Angus .....	Lawton
J. T. Anthony .....	Lawton
G. S. Barber .....	Lawton
Jackson Broshears .....	Lawton
E. B. Dunlap .....	Lawton
P. G. Dunlap .....	Lawton
E. S. Gooch .....	Lawton
L. T. Gooch .....	Lawton
F. W. Hammond .....	Lawton
J. R. Hood .....	Indianapolis
C. P. Hues .....	Lawton
C. W. Joyce .....	Fletcher
G. E. Kerr .....	Chattanooga
L. C. Knee .....	Lawton
T. R. Lutner .....	Lawton
J. W. Malcom .....	Lawton
C. W. Martin .....	Elgin
W. S. Mason .....	Lawton
W. B. Mead .....	Lawton
E. Brent Mitchell .....	Lawton
A. H. Stewart .....	Lawton

## COTTON COUNTY

C. W. Alexander .....	Temple
C. F. House .....	Walters

## CRAIG COUNTY

F. M. Adams .....	Vinita
Louis Bagby .....	Vinita
C. P. Bell .....	Welch
Wm. M. Campbell .....	Vinita
N. L. Cornwall .....	Meridian
B. L. Elam .....	Centralia
F. T. Gastineau .....	Vinita

\*deceased.

P. L. Hays .....	Vinita
A. W. Herron .....	Vinita
W. R. Marks .....	Vinita
Robert L. Mitchell.....	U.S.V.B. Hosp., Muskogee
C. S. Neer .....	Vinita
E. A. Pickens .....	Vinita
J. H. L. Staples .....	Bluejacket
D. B. Stough .....	Vinita
J. F. Walker .....	Grove

## CREEK COUNTY

W. G. Bisbee .....	Bristow
J. E. Buchanan .....	Mounds
O. C. Coppedge .....	Bristow
O. S. Coppedge .....	Depew
E. M. Cowart .....	Bristow
O. H. Cowart .....	Bristow
G. C. Croston .....	Sapulpa
Harry Haas .....	Sapulpa
W. E. Harrington .....	Depew
J. E. Hollis .....	Bristow
Alva Jones .....	Sapulpa
Ellis Jones .....	Sapulpa
E. W. King .....	Bristow
J. B. Lampton .....	Sapulpa
R. E. Leatherneck .....	Drumright
P. K. Lewis .....	Sapulpa
W. P. Longmire .....	Sapulpa
J. M. Matenlee .....	Sapulpa
C. L. McCallum .....	Sapulpa
C. R. McDonald .....	Manford
C. H. Morris .....	Slick
Paul Mote .....	Sapulpa
Wm J. Neal .....	Drumright
C. B. Reese .....	Sapulpa
E. W. Reynolds .....	Bristow
S. W. Reynolds .....	Drumright
W. P. Robinson .....	Sapulpa
Paul Sanger .....	Drumright
Chas. Schrader .....	Bristow
B. C. Schwab .....	Sapulpa
G. W. Sisler .....	Bristow
O. W. Starr .....	Drumright
Roy M. Sweeney .....	Sapulpa
Z. G. Taylor .....	Mounds
Fred W. Turner .....	Sapulpa
E. R. Weaver .....	Shamrock
John M. Wells .....	Bristow
Geo. H. Wetzel .....	Sapulpa
J. Clay Williams .....	Bristow

## CUSTER COUNTY

C. J. Alexander .....	Clinton
W. I. Basinger .....	Butler
T. A. Boyd .....	Weatherford
C. L. Brundage .....	Thomas
E. E. Darnell .....	Clinton
J. T. Frizzell .....	Clinton
D. Gaede .....	Weatherford
B. R. Gayman .....	Butler
K. D. Gosson .....	Custer City
J. R. Hinshaw .....	Butler
A. J. Jeter .....	Clinton
Ellis Lamb .....	Clinton
E. M. Loyd .....	Taloga
H. P. Mahan .....	Clinton
C. H. McBurney .....	Clinton
O. H. Parker .....	Custer City
W. W. Parker .....	Thomas
McLain Rogers .....	Clinton
N. E. Ruhl .....	Weatherford
W. E. Seba .....	Leedy
F. R. Vieregg .....	Clinton
J. J. Williams .....	Weatherford

## DEWEY COUNTY

Frank W. Allen .....	Leedy
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## GARFIELD COUNTY

J. W. Baker .....	Enid
R. C. Baker .....	Enid
Paul B. Champlin .....	Enid
L. W. Cotton .....	Enid
Julian Field .....	Enid
Glenn Francisco .....	Enid
J. W. Francisco .....	Enid
V. R. Hamble .....	Enid
G. O. Hartman .....	C. H. Buhl Hosp., Sharon, Pa.
J. H. Hays .....	Enid
T. B. Hinson .....	Enid
P. W. Hopkins .....	Enid
F. A. Hudson .....	Enid
W. L. Kendall .....	Enid
W. G. Kiebler .....	Enid
W. E. Lamerton .....	Enid
J. A. Mahoney .....	Enid
S. N. Mayberry .....	Enid
S. H. McEvoy .....	Enid
A. L. McInnis .....	Enid
W. B. Newell .....	Enid
A. S. Piper .....	Enid
W. H. Rhodes .....	Enid
D. D. Roberts .....	Enid
F. P. Robinson .....	Enid
J. R. Swank .....	Enid
C. W. Tedrowe .....	Enid
H. F. Vandever .....	Enid
John R. Walker .....	Enid
J. M. Watson .....	Enid
R. H. Wigner .....	Enid
A. E. Wilkins .....	Covington
E. J. Wolff .....	Waukomis

## GARVIN COUNTY

T. C. Brannum .....	Pauls Valley
*James R. Callaway .....	Pauls Valley
John R. Callaway .....	Pauls Valley
H. V. Dreaback .....	Earlsboro
Lewis Gaddy .....	Stratford
W. P. Greening .....	Pauls Valley
T. F. Gross .....	Lindsay
G. L. Johnson .....	Pauls Valley
E. H. Lain .....	Lindsay
J. K. Lindsey .....	Elmore City
N. H. Lindsey .....	Pauls Valley
H. P. Markham .....	Pauls Valley
Hugh H. Monroe .....	Lindsay
W. E. Rauls .....	Paoli
M. E. Robberson .....	Wynnewood
A. H. Shi .....	Stratford
C. L. Sullivan .....	Elmore City
J. W. Tucker .....	Lindsay
Thos. Walker .....	Wynnewood
H. P. Wilson .....	Wynnewood

## GRADY COUNTY

J. C. Ambrister .....	Chickasha
H. C. Antle .....	Chickasha
W. R. Barry .....	Alex
Walter Baze .....	Chickasha
Martha Bledsoe .....	Chickasha
W. L. Bonnell .....	Chickasha
U. C. Boon .....	Chickasha
J. C. Bramblett .....	Pocasset
H. A. Calvert .....	Chickasha
W. H. Cook .....	Chickasha
Roy E. Emanuel .....	Chickasha
P. J. Hampton .....	Rush Springs

\*deceased.

C. P. Cox .....	Ninnekah
E. L. Dawson .....	Chickasha
D. S. Downey .....	Chickasha
L. E. Emanuel .....	Chickasha
G. R. Gerard .....	Chickasha
A. E. Henning .....	Minco
R. R. Hume .....	Minco
A. B. Leeds .....	Chickasha
J. S. Little .....	Minco
W. H. Livermore .....	Chickasha
Rebecca Mason .....	Chickasha
S. O. Marrs .....	Chickasha
H. C. Masters .....	Minco
G. M. McVey .....	Verden
C. P. Mitchell .....	Chickasha
A. W. Nunnery .....	Chickasha
J. F. Renegar .....	Tuttle
A. C. White .....	Chickasha

## GRANT COUNTY

G. T. Drennan .....	Pond Creek
Abraham Hamilton .....	Manchester
I. V. Hardy .....	Medford
E. E. Lawson .....	Medford
J. M. Tucker .....	Nash

## GREER COUNTY

C. W. Austin .....	Mangum
C. F. Border .....	Mangum
M. E. Chambers .....	Reed
C. P. Cherry .....	Granite
E. E. Conner .....	Vinson
W. O. Dodson .....	Willow
H. W. Finley .....	McLean, Tex.
J. B. Hollis .....	Mangum
O. R. Jeter .....	Mangum
J. B. Lansdin .....	Granite
J. T. Lowe .....	Mangum
F. H. McGregor .....	Mangum
J. S. Meredith .....	Duke
T. J. Nunnery .....	Granite
L. E. Pearson .....	Mangum
E. M. Poer .....	Mangum
C. C. Shaw .....	Brinkman

## HARMON COUNTY

W. T. Ray .....	Gould
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## HASKELL COUNTY

A. T. Hill .....	Stigler
E. Johnson .....	Kinta
R. E. Jones .....	Stigler
J. W. McDonald .....	Hoyt
R. F. Terrell .....	Stigler
T. B. Turner .....	Stigler
N. K. Williams .....	McCurtain

## HUGHES COUNTY

W. D. Atkins .....	Holdenville
J. A. Bently .....	Allen
R. J. Crabill .....	Allen
A. L. Davenport .....	Holdenville
G. W. Diggs .....	Wetumka
T. B. Felix .....	Holdenville
W. E. Floyd .....	Holdenville
L. J. George .....	Stewart
S. H. Hamilton .....	Non
C. A. Hicks .....	Wetumka
W. F. Hooper .....	Holdenville
J. H. Kay .....	Holdenville
L. M. Lett .....	Dustin
D. Y. McCary .....	Holdenville
P. E. Mitchell .....	Wetumka
R. D. Morris .....	Stewart
J. F. Musser .....	Calvin

C. E. Parker .....	Dustin
G. W. Patterson .....	Wetumka
J. D. Scott .....	Holdenville
W. L. Taylor .....	Gertie
E. B. Thompson .....	Holdenville
C. S. Wallace .....	Holdenville
G. H. Wallace .....	Holdenville
C. Cash Whittle .....	Holdenville

## JACKSON COUNTY

Edw. A. Abernathy .....	Altus
Roderick F. Brown .....	Altus
A. C. Byars .....	Elmer
Emory S. Crow .....	Olustee
Raymond H. Fox .....	Altus
Joseph H. Hix .....	Altus
Earl W. Mabry .....	Altus
R. H. Mays .....	Duke
L. H. McConnell .....	Altus
J. S. McFaddin .....	Altus
W. H. Price .....	Eldorado
Oscar Pyle .....	Altus
John R. Reid .....	Altus
W. P. Rudell .....	Altus
C. G. Spears .....	Altus
D. O. Spencer .....	Headrick
H. R. Taylor .....	Blair
H. M. Westover .....	Martha

## JEFFERSON COUNTY

W. T. Andreskowski .....	Bryan
W. M. Browning .....	Waurika
W. C. Burgess .....	Ringling
D. B. Collins .....	Waurika
J. I. Derr .....	Waurika
W. J. Dorsey .....	Ringling
F. M. Edwards .....	Ringling
J. I. Hollingsworth .....	Waurika
A. B. Holsted .....	Temple
C. M. Maupin .....	Waurika
W. R. Strassner .....	Ringling
J. I. Taylor .....	Ringling
L. L. Wade .....	Ryan
J. W. Watson .....	Ryan

## JOHNSON COUNTY

Guy Clark .....	Wapanucka
W. P. Cottrell .....	Chandler

## KAY COUNTY

W. O. Armstrong .....	Ponca City
C. W. Arrendell .....	Ponca City
C. J. Barker .....	Kaw City
J. H. Beatty .....	Tonkawa
G. L. Berry .....	Blackwell
C. L. Blanks .....	Ponca City
H. S. Browne .....	Ponca City
Merl Clift .....	Blackwell
David M. Cowgill .....	Newkirk
T. W. Dunham .....	Tonkawa
P. A. Edwards .....	Nardin
R. B. Gibson .....	Ponca City
H. O. Gowey .....	Newkirk
A. R. Handcock .....	Seminole
A. R. Haven .....	Blackwell
J. C. Hawkins .....	Blackwell
A. L. Hazen .....	Newkirk
Lawson Hughes .....	Tonkawa
J. A. Jones .....	Tonkawa
Allen C. Kramer .....	Ponca City
W. M. Leslie .....	Blackwell
W. P. Lipscomb .....	Ponca City
W. A. Lockwood .....	Ponca City
Allen Lowery .....	Blackwell
H. E. Marshall .....	Wichita, Kan.

E. O. Martin .....	Three Sands
Dewey Mathews .....	Tonkawa
Geo. Melinder .....	Newkirk
D. W. Miller .....	Blackwell
J. W. Moore .....	Tonkawa
W. M. McClurkin .....	Ponca City
Laile G. Neal .....	Ponca City
Geo. Neimann .....	Ponca City
C. E. Northcutt .....	Ponca City
A. S. Nuckols .....	Ponca City
A. S. Risser .....	Blackwell
W. A. T. Robertson .....	Ponca City
R. R. Sigler .....	Braman
H. M. Stricklen .....	Tonkawa
L. C. Vance .....	Ponca City
E. E. Waggoner .....	Tonkawa
J. C. Wagner .....	Ponca City
I. D. Walker .....	Blackwell
J. W. Werner .....	Newkirk
M. S. White .....	Blackwell
J. T. B. Widney .....	Kaw City

## KINGFISHER COUNTY

E. R. Cavett .....	Loyal
A. Dixon .....	Hennessey
Chas. W. Fisk .....	Kingfisher
C. O. Gose .....	Hennessey
John W. Pendleton .....	Kingfisher
N. Rector .....	Hennessey
Frank Scott .....	Kingfisher
B. I. Townsend .....	Hennessey

## KIOWA COUNTY

J. L. Adams .....	Hobart
J. D. Ballard .....	Mt. View
J. M. Bonham .....	Hobart
J. R. Bryce .....	Snyder
*A. T. Dobson .....	Hobart
A. H. Hathaway .....	Mt. View
J. A. Land .....	Hobart
H. C. Lloyd .....	Hobart
F. F. Martin .....	Roosevelt
E. P. Miles .....	Hobart
J. H. Moore .....	Hobart
Wm. McIlwain .....	Lone Wolf
J. A. Muller .....	Snyder
J. M. Ritter .....	Roosevelt
F. E. Walker .....	Lone Wolf
B. H. Watkins .....	Hobart
J. D. Winter .....	Hobart

## LATIMER COUNTY

E. L. Evins .....	Wilburton
E. B. Hamilton .....	Wilburton
J. M. Harris .....	Wilburton
T. L. Henry .....	Wilburton
C. R. Morrison .....	Ada
R. L. Rich .....	Red Oak

## LE FLORE COUNTY

F. P. Baker .....	Talihina
J. B. Beckett .....	Spiro
G. R. Booth .....	Le Flore
Stanley Callahan .....	Heavener
E. L. Collins .....	Panama
S. C. Dean .....	Howe
Wm. M. Duff .....	Braden
E. N. Fair .....	Heavener
Harrell Hardy .....	Poteau
J. J. Hardy .....	Poteau
W. J. Hunt .....	Poteau
W. F. Lunsford .....	Poteau
R. W. Minor .....	Williams
R. L. Wright .....	Talihina

A. M. Mixon .....	Spiro
F. H. Norwood .....	Prague
Edgar S. Shippey .....	Wister
Wm. E. Vandever .....	Talihina
J. B. Wear .....	Poteau
Earl M. Woodson .....	Poteau

## LINCOLN COUNTY

J. W. Adams .....	Chandler
W. D. Baird .....	Stroud
F. C. Brown .....	Sparks
R. A. Brown .....	Prague
A. W. Coleman .....	Davenport
W. H. Davis .....	Chandler
J. O. Glenn .....	Stroud
J. M. Hancock .....	Chandler
R. H. Hannah .....	Prague
A. W. Holland .....	Chandler
H. C. Iles .....	Prague
Para F. Irwin .....	Wellston
A. M. Marshall .....	Chandler
Levi Murray .....	Wellston
U. E. Nickell .....	Davenport
F. H. Norwood .....	Prague
J. S. Rollins .....	Prague
G. L. Wiles .....	Stroud

## LOGAN COUNTY

C. B. Barker .....	Guthrie
E. O. Barker .....	Guthrie
Pauline Barker .....	Guthrie
J. O. Butler .....	Crescent
A. G. T. Childers .....	Mulhall
P. B. Gardner .....	Marshall
Dan Gray .....	Guthrie
L. A. Hahn .....	Guthrie
C. B. Hill .....	Guthrie
W. H. Larkin .....	Guthrie
J. F. Martin .....	Guthrie
J. L. Melvin .....	Guthrie
Wm. C. Miller .....	Guthrie
C. S. Petty .....	Guthrie
L. H. Ritzhaupt .....	Guthrie
J. E. Souter .....	Guthrie
F. E. Trigg .....	Guthrie
A. A. West .....	Guthrie

## MAJOR COUNTY

John V. Anderson .....	Fairview
Elsie Specht .....	Fairview

## MARSHALL COUNTY

T. A. Blaylock .....	Madill
J. A. Collins .....	Will's
W. D. Haynie .....	Kingston
J. L. Holland .....	Madill
P. F. Robinson .....	Madill

## MAYES COUNTY

Sylba Adams .....	Pryor
W. C. Bryant .....	Choteau
J. Dorrough .....	Poteau
J. E. Hollingsworth .....	Strang
B. L. Morrow .....	Salina
Carl Puckett .....	Oklahoma City
Idabelle Rogers .....	Pryor
W. J. Whitaker .....	Pryor
L. C. White .....	Adair

## McCLAIN COUNTY

G. S. Barger .....	Purcell
O. O. Dawson .....	Wayne
I. N. Kolb .....	Blanchard
W. C. McCurdy .....	Purcell
W. B. Slover .....	Blanchard

## McCURTAIN COUNTY

N. L. Barker	Broken Bow
A. W. Clarkson	Valliant
C. R. Huckabay	Valliant
E. A. Kelleam	Chin Lee, Ariz.
J. T. Moreland	Idabel
W. A. Moreland	Idabel
G. C. Mullins	Broken Bow
R. H. Sherrill	Broken Bow
J. M. Thompson	Walters
R. D. Williams	Idabel
N. D. Woods	Golden

## McINTOSH COUNTY

Dyton Bennett	Texanna
G. W. Graves	Brownsfield, Texas
N. P. Lee	Checotah
D. E. Little	Eufaula
J. H. McColloch	Checotah
B. F. Rushing	Hanna
F. L. Smith	Fame
Wm. A. Tolleson	Eufaula
G. W. West	Eufaula

## MURRAY COUNTY

Paul V. Anadown	Sulphur
Howson C. Bailey	Sulphur
A. P. Brown	Davis
Byrun B. Brown	Davis
I. N. Brown	Fletcher
J. R. Keller	Sulphur
J. C. Luster	Davis
P. S. Mitchell	Sulphur
W. H. Mytinger	Sulphur
W. H. Powell	Sulphur
A. S. Riddel	Sulphur
Geo. W. Slover	Sulphur
O. W. Sprouce	Sulphur
W. H. Williamson	Sulphur

## MUSKOGEE COUNTY

J. R. Graves	Boynton
S. G. Hamm	Haskell
J. I. Hollingsworth	Waurika
W. R. Joblin	Porter
S. W. Minor	Boynton
W. E. Pearce	Boynton
T. T. Shackelford	Haskell
J. W. Sosbee	Stroud
J. R. Waltrip	Coweta

## MUSKOGEE

H. T. Ballantine	Surety Bldg.
W. B. Berry	Barnes Bldg.
J. L. Blakemore	Barnes Bldg.
C. E. DeGroot	Equity Bldg.
R. N. Donnell	Raymond Bldg.
F. G. Dorwart	Barnes Bldg.
K. M. Dwight	808 North "C"
Albert Earnest	Barnes Bldg.
A. W. Everly	Equity Bldg.
F. W. Ewing	Surety Bldg.
F. B. Fite	Barnes Bldg.
Edw. Halsell Fite	Barnes Bldg.
W. P. Fite	Barnes Bldg.
S. J. Fryer	Surety Bldg.
C. M. Fullenwider	Barnes Bldg.
A. W. Harris	Surety Bldg.
*James G. Harris	Excg. Nat'l Bk. Bldg.
Chas. W. Heitzman	Barnes Bldg.
Nowlin R. Holcombe	Surety Bldg.
Carl F. Jordan	Metropolitan Bldg.
E. S. Keith	"D" and Dayton Sts.
Forest S. King	Surety Bldg.

\*deceased.

O. C. Klass	Surety Bldg.
Samuel E. Mitchell	U. S. V. B. Hosp. 90
A. L. Mobley	U.S.V.B. Hosp. 90
Chas. P. Murphy	U.S.V.B. Hosp. 90
Shade D. Neely	Barnes Bldg.
J. T. Nichols	Equity Bldg.
I. B. Oldham, Jr.	426 North 6th St.
I. B. Oldham, Sr.	426 North 6th St.
J. G. Rafter	Metropolitan Bldg.
John Reynolds	Masonic Bldg.
C. V. Rice	Barnes Bldg.
*H. C. Rogers	Manhattan Bldg.
H. A. Scott	Manhattan Bldg.
G. W. Stewart	Surety Bldg.
A. L. Stocks	Barnes Bldg.
C. A. Thompson	Barnes Bldg.
Milton K. Thompson	Surety Bldg.
W. T. Tilley	341 E. Okmulgee Ave.
J. S. Vittum	Barnes Bldg.
F. L. Walton	Surety Bldg.
Floyd E. Watterfield	Com. Natl. Bk. Bldg.
Chas. E. White	Surety Bldg.
J. Hutchings White	Surety Bldg.
Fred J. Wilkiemeyer	Barnes Bldg.
I. C. Wolfe	426 North 6th St.
J. W. Francis	Perry

## NOBLE COUNTY

W. E. Arnold	Lucien
S. H. Gaines	Lucien
L. Kuntz	Perry
B. A. Owen	Perry
T. F. Renfrow	Billings

## NOWATA COUNTY

Edw. F. Collins	Nowata
John R. Collins	Nowata
Fred R. Dolson	Nowata
David M. Lawson	Nowata
S. P. Roberts	Alluwe
M. B. Scott	Delaware
John P. Sudderth	Nowata
Geo. A. Waters	Lenapsh

## OKFUSKEE COUNTY

Allen C. Adams	Weleetka
C. M. Bloss	Okemah
C. C. Bombarger	Paden
M. O. Brice	Okemah
W. B. Carroll	Okemah
A. M. Chambers	Weleetka
C. M. Cochran	Okemah
W. C. Griffith	Weleetka
W. P. Jenkins	Bearden
J. A. Kennedy	Okemah
R. Keys	Okemah
A. C. Lucas	Castle
A. J. Moyse	Castle
L. A. Nye	Okemah
J. M. Pemberton	Okemah
J. C. Pitchford	Cromwell
J. R. Preston	Weleetka
T. R. Preston	Weleetka
L. J. Spickard	Okemah
A. J. Stephenson	Okemah
H. Wesley Yeats	Okemah

## OKLAHOMA COUNTY

R. G. Fitz	Bethany
T. H. Flesher	Edmond
Karl Haas	Harrah
Jas. I. Lyon	Edmond
R. M. Ruhl	Edmond
S. N. Stone	Edmond

\*deceased.

J. M. Alford .....	Medical Arts Bldg.
E. P. Allen .....	M. A. Bldg.
Lelia E. Andrews .....	M. A. Bldg.
F. M. Bailey .....	M. A. Bldg.
W. H. Bailey .....	301 W. 12th St.
R. M. Balyeat .....	M. A. Bldg.
C. E. Barker .....	M. A. Bldg.
C. E. Bates .....	Elk Club Bldg.
C. N. Berry .....	M. A. Bldg.
M. R. Beyer .....	2006 W. 29th
J. G. Binkley .....	M. A. Bldg.
C. D. Blachley .....	M. A. Bldg.
Lucille S. Blachley .....	State Capitol Bldg.
A. L. Blesh .....	301 W. 12th St.
Nathan Boggs .....	1st Nat'l Bldg.
Floyd Bolend .....	M. A. Bldg.
Rex Bolend .....	M. A. Bldg.
C. P. Bondurant .....	M. A. Bldg.
Geo. L. Borecky .....	Perrine Bldg.
H. C. Bradley .....	Amer. Nat'l Bldg.
D. W. Branham .....	M. A. Bldg.
Thos. A. Buchanan .....	Amer Nat'l Bldg.
Leo Cailey .....	M. A. Bldg.
Albert Cates .....	M. A. Bldg.
J. J. Caviness .....	M. A. Bldg.
A. B. Chase .....	Colcord Bldg.
H. H. Cloudman .....	M. A. Bldg.
Cyril E. Clymer .....	M. A. Bldg.
A. J. Coley .....	M. A. Bldg.
Fay M. Cooper .....	M. A. Bldg.
P. H. Crawford .....	M. A. Bldg.
S. R. Cunningham .....	M. A. Bldg.
C. E. Davis .....	M. A. Bldg.
E. P. Davis .....	1601 W. 11th
F. A. DeMand .....	Bellevue Hosp. N. York
Walter H. Dersch .....	Shops Bldg.
G. K. Dickson .....	M. A. Bldg.
W. E. Dixon .....	M. A. Bldg.
T. W. Dowdy .....	Amer. Nat'l Bldg.
R. O. Early .....	M. A. Bldg.
E. G. Earnheart .....	1316 W. 10th
W. E. Eastland .....	M. A. Bldg.
R. T. Edwards .....	1st Nat'l Bldg.
N. Price Eley .....	M. A. Bldg.
F. B. Erwin .....	M. A. Bldg.
J. B. Eskridge .....	M. A. Bldg.
E. S. Ferguson .....	M. A. Bldg.
C. J. Fishman .....	132 W. 4th
L. B. Foster .....	Terminal Bldg.
W. A. Fowler .....	261 N. Cheyenne Drive Monrovia, Cal.
S. E. Frierson .....	M. A. Bldg.
W. Banks Fuller .....	2225½ Exchange Ave.
Geo. Fulton .....	Amer. Natl. Bldg.
P. K. Graening .....	Colcord Bldg.
M. S. Gregory .....	M. A. Bldg.
John W. Gray .....	Huckins Estate Bldg.
E. Goldfain .....	Elks Bldg.
A. L. Guthrie .....	M. A. Bldg.
Clark H. Hall .....	Colcord Bldg.
J. E. Harbison .....	Terminal Bldg.
Paul E. Haskett .....	1st Nat'l Bldg.
J. A. Hatchett .....	M. A. Bldg.
B. A. Hayes .....	M. A. Bldg.
J. E. Heatley .....	M. A. Bldg.
F. B. Hicks .....	M. A. Bldg.
G. W. Hinchee .....	1435 W. 34th
A. C. Hirshfield .....	M. A. Bldg.
J. J. Hoover .....	203 City Hall Bldg.
J. R. Holliday .....	M. A. Bldg.
R. M. Howard .....	M. A. Bldg.
C. A. Howell .....	1st Nat'l Bldg.
Geo. Hunter .....	2248 W. 17th
Leon Janco .....	10 W. Park Plac.

H. G. Jeter	University Hosp.
W. J. Jolly	M. A. Bldg.
Hugh C. Jones	M. A. Bldg.
John F. Kelley	M. A. Bldg.
S. E. Kernodle	119 W. 5th
V. Kuchar	Shops Bldg.
John F. Kuhn	M. A. Bldg.
W. A. Lackey	947 W. 13th
E. S. Lain	M. A. Bldg.
Geo. A. LaMotte	Colcord Bldg.
Wm Langsford	M. A. Bldg.
Wann Langston	University Hosp.
N. E. Lawson	M. A. Bldg.
C. E. Lee	Equity Bldg.
Elizabeth Lehmer	123 W. 4th
A. R. Lewis	Sh. ps Bldg.
F. M. Lingenfelter	502 W. "G"
LeRoy D. Long	M. A. Bldg.
LeRoy Long	M. A. Bldg.
Ross D. Long	M. A. Bldg.
T. R. Longmire	3-2½ N. Bdwy.
R. E. Looney	M. A. Bldg.
R. S. Love	M. A. Bldg.
Dick Lowry	M. A. Bldg.
Tom Lowry	M. A. Bldg.
J. C. MacDonald	301 W. 12th
E. Margo	717 N. Robinson
J. T. Martin	M. A. Bldg.
E. D. McBride	717 N. Robinson
R. S. McCabe	M. A. Bldg.
J. F. Messenbaugh	Colcord Bldg.
J. P. McGee	M. A. Bldg.
D. D. McHenry	M. A. Bldg.
Lawrence C. McHenry	M. A. Bldg.
J. R. McLaughlin	M. A. Bldg.
P. M. McNeil	M. A. Bldg.
W. H. Miles	203 City Hall Bldg.
B. H. Moore	Colcord Bldg.
C. D. Moore	Perrine Bldg.
Ellis Moore	M. A. Bldg.
L. J. Moorman	M. A. Bldg.
J. Z. Mraz	301 W. 12th
R. L. Murdoch	M. A. Bldg.
E. R. Musick	M. A. Bldg.
W. M. Mussil	Perrine Bldg.
Ralph E. Myers	St. Anthony Hosp.
L. A. Newton	M. A. Bldg.
N. R. Nowlin	Colcord Bldg.
Ben K. Parks	M. A. Bldg.
Kirt Parks	Terminal Bldg.
D. D. Paulus	M. A. Bldg.
Grider Penick	Colcord Bldg.
A. S. Phelps	M. A. Bldg.
J. S. Pine	M. A. Bldg.
J. M. Postelle	947 W. 13th
C. M. Pounders	210 W. 10th
John A. Reck	Colcord Bldg.
Horace Reed	M. A. Bldg.
Ruth S. Reichmann	M. A. Bldg.
Lea A. Riely	M. A. Bldg.
J. W. Riley	119 W. 5th
J. H. Robinson	301 W. 13th
J. A. Roddy	116 W. 5th
M. M. Roland	M. A. Bldg.
J. B. Roslater	Shops Bldg.
F. E. Rosenberger	M. A. Bldg.
*G. B. Ross	Huckins Estate Bldg.
W. W. Rucks	301 W. 12th
R. E. Runkle	M. A. Bldg.
L. M. Sackett	Amer. Nat'l Bldg.
A. L. Salamon	M. A. Bldg.
A. J. Sands	M. A. Bldg.
F. A. Sanger	Cotton Exchg. Bldg.
Fenton M. Sanger	Cotton Exchg. Bldg.

\*deceased.

Winnie Sanger .....	Cotton Exchg. Bldg.
J. B. Shannon .....	217 Liberty Bldg.
Fred C. Sheets .....	Tradesmen's Nat'l Bldg.
M. Smith .....	1400 Classen Blvd.
L. J. Starry .....	M. A. Bldg.
M. E. Stout .....	M. A. Bldg.
E. S. Strader .....	M. A. Bldg.
S. P. Strother .....	M. A. Bldg.
Earnest Sullivan .....	M. A. Bldg.
Elijah S. Sullivan .....	M. A. Bldg.
Geo. R. Tabor .....	Amer. Nat'l Bldg.
C. B. Taylor .....	M. A. Bldg.
Wm. Taylor .....	1st Nat'l Bldg.
H. Coulter Todd .....	Colcord Bldg.
C. W. Townsend .....	M. A. Bldg.
H. H. Turner .....	M. A. Bldg.
E. L. Underwood .....	1st Nat'l Bldg.
E. R. Vahlberg .....	Perrine Bldg.
Curt von Wedel .....	Colcord Bldg.
T. G. Wails .....	M. A. Bldg.
W. J. Wallace .....	M. A. Bldg.
J. C. Warmack .....	Colcord Bldg.
Marshall W. Weir .....	Colcord Bldg.
Eva Wells .....	M. A. Bldg.
W. W. Wells .....	M. A. Bldg.
W. K. West .....	M. A. Bldg.
L. M. Westfall .....	M. A. Bldg.
A. W. White .....	M. A. Bldg.
O. R. White .....	M. A. Bldg.
Oscar White .....	Colcord Bldg.
M. McCullough Wickham .....	M. A. Bldg.
S. F. Wildman .....	M. A. Bldg.
H. M. Williams .....	M. A. Bldg.
E. C. Wilson .....	M. A. Bldg.
K. J. Wilson .....	M. A. Bldg.
E. L. Yeakel .....	M. A. Bldg.
A. D. Young .....	M. A. Bldg.
A. M. Young .....	Perrine Bldg.

## OKMULGEE COUNTY

Lin Alexander .....	Okmulgee
T. C. Alexander .....	Okmulgee
*John E. Bercaw .....	Okmulgee
Axel J. Black .....	Okmulgee
H. D. Boswell .....	Henryetta
I. W. Bollinger .....	Henryetta
W. W. Brooks .....	Borger, Texas

Care Phillips Petroleum Co.

E. C. Byram .....	Okmulgee
T. C. Carlross .....	Morris
M. D. Carnell .....	Okmulgee
C. H. Cooke .....	Beggs
W. M. Cott .....	Okmulgee
J. G. Edwards .....	Okmulgee
J. B. Ferguson .....	Okmulgee
M. B. Glismann .....	Okmulgee
O. O. Hammonds .....	Oklahoma City
W. W. Hicks .....	Okmulgee
A. G. Hughey .....	Dewar
F. H. Hollingsworth .....	Okmulgee
A. R. Holmes .....	Henryetta
W. S. Hudson .....	Okmulgee
G. A. Kilpatrick .....	Henryetta
S. B. Leslie .....	Okmulgee
James O. Lowe .....	Okmulgee
Thos. J. Lynch .....	Okmulgee
J. C. Matheney .....	Okmulgee
G. Y. McKinney .....	Henryetta
J. A. Milroy .....	Okmulgee
J. L. Miner .....	Beggs
C. M. Ming .....	Okmulgee
W. C. Mitchener .....	Okmulgee
R. Mooney .....	Henryetta
J. P. Nelson .....	Shulter

\*deceased.

J. H. Powell .....	Henryetta
H. L. Rains .....	Okmulgee
D. M. Randel .....	Okmulgee
Harvey O. Randell .....	Okmulgee
J. C. Rembert .....	Okmulgee
J. C. Robinson .....	Henryetta
E. D. Rodda .....	Okmulgee
F. E. Sadler .....	Henryetta
W. C. Sanderson .....	Henryetta
T. H. Shelton .....	Okmulgee
N. N. Simpson .....	Henryetta
W. W. Stark .....	Okmulgee
L. B. Torrance .....	Okmulgee
W. C. Vernon .....	Okmulgee
J. O. Wails .....	Okmulgee
V. W. Wallace .....	Morris
Fred S. Watson .....	Okmulgee
W. S. Watson .....	Okmulgee
R. L. Westover .....	Okmulgee
Dean Widener .....	Okmulgee
L. B. Windham .....	Okmulgee

## OSAGE COUNTY

W. H. Aaron .....	Pawhuska
E. T. Alexander .....	Barnsdall
R. J. Barritt .....	Pawhuska
J. V. Blair .....	401 N. Bdwy., Corpus Christi, Tex.
R. F. Brady .....	DeNoya
W. W. Chase .....	Barnsdall
A. R. Chisholm .....	Pawhuska
T. J. Colley .....	Hominy
C. H. Day .....	Pawhuska
B. E. Dozier .....	Lyman
Herman Fagin .....	Osage
F. R. First .....	Wynona
G. I. Garrison .....	Fairfax
G. W. Goss .....	Pawhuska
T. P. Govan .....	Pawhuska
O. R. Gregg .....	Pawhuska
C. H. Guild .....	Apperson
J. T. Gunter .....	Barnsdall
M. Karasek .....	Shidler
E. C. Keys .....	Shidler
E. N. Lipe .....	Fairfax
C. K. Logan .....	Hominy
H. B. McFarland .....	Cleveland
Q. B. Neale .....	Pawhuska
A. S. Price .....	209 E. 23rd. N. Y.
J. M. Reed .....	Fairfax
H. M. Reeder .....	Webb City
M. E. Rust .....	Pawhuska
J. G. Shoun .....	Fairfax
A. J. Smith .....	Pawhuska
G. E. Stanbro .....	Pawhuska
B. F. Sullivan .....	Barnsdall
H. L. Summers .....	204 Public Sq., Marion, Ill.
Roscoe Walker .....	Pawhuska
C. W. Williams .....	Pawhuska
L. C. Williams .....	Pawhuska
Divonis Worten .....	Pawhuska

## OTTAWA COUNTY

E. Albert Aisenstadt .....	Picher
J. R. Barry .....	Picher
J. O. Bradshaw .....	Welch
V. V. Butler .....	Picher
R. F. Cannon .....	Miami
G. W. Colvert .....	Miami
A. M. Cooter .....	Miami
J. W. Craig .....	Miami
F. R. Deans .....	Miami
M. M. DeArman .....	Miami
F. R. Deans .....	Miami
Burleigh DeTar .....	Miami

\*deceased.

Geo. DeTar	Miami
W. M. Dolan	Picher
J. B. Hampton	Commerce
R. H. Harper	Afton
J. Walter Hough	Miami
J. C. Jacobs	Miami
J. S. Jacoby	Commerce
John C. Kitchen	Picher
*E. A. Leisure	P. O. Box No. 22, Slater, Mo.
J. B. Lightfoot	Miami
Chas. McCallum	Quapaw
Chas A. McLelland	Miami
G. P. McNaughton	Miami
F. V. Meriweather	Picher
H. K. Miller	Fairland
E. D. Mabry	Hockerville
J. T. Moon	Miami
F. M. O'Kelley	Picher
I. Phillips	Picher
General Pinnell	Miami
J. W. Prowell	Kansas, Okla.
B. W. Ralston	Commerce
Russell Richard	Picher
W. B. Smith	Miami
G. W. Taylor	314 New Daniels Bldg, Tulsa
L. W. Trout	Afton
G. O. Webb	Cardin
J. P. Williams	Picher
J. H. Woodward	Miami
F. L. Wormington	Miami

## PAWNEE COUNTY

C. W. Ballaine	Cleveland
C. A. Beeler	Pawnee
C. E. Beitman	Skedee
J. A. Roberts	Cleveland
E. T. Robison	Cleveland

## PAYNE COUNTY

C. H. Beach	Glenco
I. A. Briggs	Stillwater
J. H. Cash	Stillwater
L. A. Cleverdon	Stillwater
W. N. Davidson	Cushing
Benj. Davis	Cushing
O. H. Friedemann	Stillwater
G. H. Gillen	Cushing
R. N. Graham	Yale
E. M. Harris	Cushing
J. Harrington	Cushing
R. W. Holbrook	Perkins
W. B. Hudson	Yale
T. A. Love	Ripley
H. C. Manning	Cushing
J. A. Martin	Cushing
L. A. Mitchell	Stillwater
P. M. Richardson	Cushing
U. E. Roberts	Stillwater
C. E. Sexton	Stillwater
L. R. Wilhite	Perkins

## PITTSBURG COUNTY

V. H. Barton	McAlester
F. J. Baum	McAlester
J. B. Bright	Kiowa
R. L. Browning	Hartshorne
C. J. Brunson	McAlester
A. D. Bunn	Savanna
A. E. Carlock	Hartshorne
J. W. Crews	Adamson
T. S. Chapman	McAlester
J. E. Davis	Haileyville
Joe Dorrough	Haileyville
J. W. Echols	McAlester
A. Griffith	No. McAlester
J. O. Grubbs	No. McAlester

W. P. Hailey	Haileyville
Chas. T. Harris	Kiowa
J. C. Johnston	McAlester
G. A. Kilpatrick	McAlester
L. C. Kuyrkendall	McAlester
W. P. Lewallen	Canadian
T. H. McCarley	McAlester
J. A. Munn	McAlester
T. T. Norris	Krebs
Chas. M. Pearce	McAlester
R. K. Pemberton	McAlester
W. G. Ramsay	Quinton
O. W. Rice	McAlester
W. W. Sames	Hartshorne
J. C. Schlicht	No. McAlester
H. D. Shankle	Hartshorne
Earnest Thomas	Quinton
W. C. Waite	McAlester
F. L. Watson	McAlester
A. J. Welch	McAlester
McClellan Wilson	McAlester
L. S. Willour	McAlester

## PONTOTOC COUNTY

N. B. Breckenridge	Merida, Yucatan, Mexico
J. G. Breco	Ada
C. T. Brydia	Ada
S. L. Burns	Ada
R. T. Castleberry	Ada
J. R. Craig	Ada
Isham L. Cummings	Ada
B. B. Dawson	Ada
W. D. Faust	Ada
Thos. G. Forsythe	Allen
T. Fuller	129 1/2 W. Grand Ave, Okla. City
*J. L. Jeffress	Ada
L. S. Johnston	Allen
R. F. King	Ada
Wilson H. Lane	Ada
E. F. Lewis	Ada
M. L. Lewis	Ada
Sam L. McKell	Ada
M. C. McNew	Ada
C. F. Needham	Ada
S. P. Ross	Ada
J. A. Rutledge	Ada
Alfred R. Sugg	Ada
W. R. Trelkeld	Ada
W. M. Webster	Ada
Orange E. Welborn	Ada

## POTTAWATOMIE COUNTY

Robert M. Anderson	Shawnee
Gardner H. Applewhite	Shawnee
McKenzie A. Baker	Shawnee
W. A. Ball	Wanette
Geo. S. Baxter	Shawnee
Walter C. Bradford	Shawnee
James M. Byrum	Shawnee
Hiram G. Campbell	Shawnee
F. LeRoy Carson	Shawnee
U. S. Cordell	Macomb
Roland R. Culbertson	Maud
J. E. Cullum	Earlsboro
J. L. Fortson	Tecumseh
Wm. M. Gallaher	Shawnee
Gaston I. Glass	Shawnee
E. J. Gray	Tecumseh
John E. Hughes	Shawnee
E. F. Hurlbut	Meeker
R. C. Kaylor	McLoud
J. W. Marshall	Shawnee
J. A. Martin	Seminole
W. F. Mathews	Earlsboro

\*deceased.

Alonzo C. McFarling .....	Shawnee
D. D. Mosher .....	Seminole
E. E. Norvell .....	Shawnee
Chas. F. Paramore .....	Shawnee
J. B. Reynolds .....	Seminole
Edgar E. Rice 1 .....	Shawnee
Eugene E. Rice .....	Shawnee
Tazwell D. Rowland .....	Shawnee
J. K. Royster .....	Wanette
T. Clay Sanders .....	Shawnee
John Hugh Scott .....	Shawnee
A. C. Shuler .....	Earlsboro
Walter S. Stevens .....	Shawnee
Jacob M. Stooksbury .....	Shawnee
Earnest Pierce Terrell .....	Shawnee
James H. Turner.....	Cumberland Hosp., New York
Howard A. Wagner .....	Shawnee
John A. Walker .....	Shawnee
Joseph E. Walker .....	Shawnee
A. J. Williams .....	McLoud
Alpha McAdams Williams .....	Shawnee

## PUSHMATAHA COUNTY

Earnest Ball .....	Sulphur
J. A. Burnett .....	Dunbar
B. M. Huckabay .....	Antlers
H. C. Johnson .....	Antlers
J. S. Lawson .....	Clayton
E. S. Paterson .....	Antlers

## ROGER MILLS COUNTY

W. S. Cary .....	Rankin
I. N. Cross .....	Cheyenne

## ROGERS COUNTY

F. A. Anderson .....	Claremore
A. M. Arnold .....	Claremore
Caroline Bassman .....	Claremore
J. C. Bushyhead .....	Claremore
W. F. Hays .....	Claremore
W. A. Howard .....	Chelsea
K. D. Jennings .....	Chelsea
W. S. Mason .....	Claremore
A. C. Meloy .....	Claremore
*W. P. Mills .....	Claremore
J. C. Smith .....	Catoosa
J. C. Taylor .....	Chelsea

## SEMINOLE COUNTY

C. W. Bates .....	Seminole
J. H. Beard .....	Seminole
T. H. Briggs .....	Wewoka
A. V. Coffey .....	Wewoka
John Davis .....	Seminole
A. N. Deaton .....	Wewoka
T. F. Harrison .....	Wewoka
T. A. Hill .....	Seminole
F. A. Howell .....	Wewoka
W. L. Hunter .....	Seminole
H. A. Kiles .....	Konowa
W. L. Knight .....	Wewoka
W. J. Long .....	Konowa
W. S. Martin .....	Wewoka
J. D. McGovern .....	Wewoka
J. F. Mills .....	Sasakaw
W. L. Moore .....	Sasakaw
W. F. Huddleston .....	Konowa
J. H. Perkins .....	Wewoka
J. T. Price .....	Seminole
Ira W. Robertson .....	Wewoka
Dwight B. Shaw .....	Seminole
*Chas. C. Sims .....	Seminole
J. H. Smith .....	Seminole
F. L. Stratton .....	Seminole
Guy B. Van Sandt .....	Wewoka

\*deceased.

A. A. Walker .....	Wewoka
T. H. Ware .....	Wewoka

## SEQUOYAH COUNTY

J. A. Cheek .....	Sallisaw
E. P. Greene .....	Sallisaw
S. B. Jones .....	Sallisaw
J. A. Morrow .....	Sallisaw
J. C. Rumley .....	Sallisaw
T. F. Wood .....	Sallisaw

## STEPHENS COUNTY

J. P. Bartley .....	Duncan
J. R. Brewer .....	Comanche
B. H. Burnett .....	Duncan
C. T. Caraker .....	Duncan
J. B. Carmichael .....	Duncan
C. P. Chumley .....	Duncan
S. S. Garrett .....	Loco
G. O. Hall .....	Duncan
P. B. Hall .....	Marlow
C. M. Harrison .....	Comanche
W. S. Ivy .....	Duncan
F. M. Johnson .....	Loco
J. H. Lindsey .....	Comanche
D. Long .....	Duncan
A. M. McMahan .....	Duncan
J. A. Mullins .....	Marlow
J. W. Nieweg .....	Duncan
L. M. Overton .....	Duncan
J. D. Pate .....	Duncan
J. L. Patterson .....	Duncan
C. C. Pruitt .....	Comanche
*S. A. Rice .....	Velma
C. C. Richards .....	Marlow
R. L. Russel .....	Marlow
W. T. Salmon .....	Duncan
L. L. Smith .....	Duncan
C. N. Talley .....	Marlow
A. J. Weedn .....	Duncan
S. H. Williamson .....	Duncan

## TEXAS COUNTY

R. B. Hayes .....	Guymon
Wm. H. Langston .....	Guymon
Daniel S. Lee .....	Guymon
Wm. J. Risen .....	Hooker

## TILLMAN COUNTY

C. Curtis Allen .....	Frederick
J. E. Arrington .....	Frederick
O. G. Bacon .....	Frederick
J. E. Childers .....	Tipton
J. W. Collier .....	Tipton
G. A. Comp .....	Manitou
Roy L. Fisher .....	Frederick
W. C. Foshee .....	Grandfield
W. A. Fuqua .....	Grandfield
H. C. Harris .....	Grandfield
M. M. Mackeller .....	Loveland
J. D. Osborn .....	Frederick
F. G. Priestley .....	Frederick
J. C. Reynolds .....	Frederick
H. L. Roberts .....	Frederick
T. F. Surgeon .....	Frederick
R. E. Wilson .....	Frederick
Harper Wright .....	Grandfield

## TULSA COUNTY

T. P. Allison .....	Sand Springs
Chas. E. Calhoun .....	Sand Springs
B. J. Davis .....	Sand Springs
R. C. Farris .....	West Tulsa
Onis Franklin .....	Broken Bow

\*deceased.

F. S. Halm	Sand Springs
B. Harris	Jenks
H. L. Hille	Collinsville
B. H. Humphrey	Sperry
A. Hutchinson	Bixby
J. H. Laws	Broken Bow
B. W. McLean	Jenks
John C. Perry	Sand Springs
J. M. Slemmons	Collinsville
H. P. Ward	Leonard
F. M. Wilks	Collinsville
C. W. Young	Cleveland

## TULSA

V. K. Allen	1001 Medical Arts Bldg.
C. M. Ament	305 Ritz Bldg.
E. P. Anderson	Masonic Temple Bldg.
J. R. Anderson	Lubbock San, Lubbock, Texas
O. C. Armstrong	812 Medical Arts Bldg.
R. Q. Atchley	507 Medical Arts Bldg.
Paul N. Atkins	1001 Medical Arts Bldg.
J. H. Barham	314 New Daniels Bldg.
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# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLAHOMA, JULY, 1928

NUMBER 7

## EYE CASES FROM ORAL SEPSIS\*

JOHN R. WALKER, M.D.  
ENID

Eye disease of oral origin is far more common than generally supposed. The ophthalmologist who is careful in searching out his obscure cases will attest that it is surprising to note the number of cases that are associated with and are due to infections within the mouth. We often neglect to examine the teeth as the cause of many of our eye diseases, although it has long been known that suppurative processes of dental origin are frequently the cause of inflammatory eye diseases.

How is the infection transmitted to the eye? In a report of 53 cases studied at the Herman Knapp Memorial Eye Hospital in one year Levy reports that 52 of the 53 cases studied showed the affected eye on the same side as the infection in the mouth. This leads to the belief that the infection is not always transmitted through the blood stream, or more cases would have been found in the eye opposite to the dental infection. The conclusions of Levy are that the infection is carried either through the lymphatics or through the osseous channels. Numerous other theories are advanced. Polet thinks that in addition to the subperiosteal and osseous channels, infection is transmitted along the nerves. Another believes that infection can be carried from the dental alveolus through the alveolar plexus and the pterygoid plexus into the ophthalmic vein and cavernous sinus. Ulrich and Dinimer believe that the infection is always hematogenous, because the lymphatics of the mouth drain into the mandibular and cervical glands.

A direct extension through the venous channels from the diseased area to the cavernous sinus is anatomically possible and unquestionably has produced sinus thrombosis and its symptoms. The method of transmission is still a debated question.

It would seem from literature that no part of the eye is immune to disease of oral origin. We may have ulcer of the cornea, keratitis, irido-cyclitis, retinitis, choroiditis, detachment of the retina, neuritis, episcleritis, abscess of the lids, orbital cellulitis or in fact every tissue of the eye may be involved, although by far the greater number of cases show the iris, ciliary body, choroid or conjunctiva to be affected. These diseases may occur in either acute or chronic form.

Brown and Irons, in their excellent paper on "The Etiology of Iritis," excluded periodontal infection (this would exclude pyorrhea) which in the minds of many is the most frequent cause of ocular lesions, ranking higher than blind abscesses, septic roots or periapical abscesses. Opposed to this view is Lawler, who maintains that pyorrhea itself is a very *infrequent* cause of ocular infection. He bases his opinion on the fact that careful treatment of the mouth has failed to exert any favorable action on the ocular condition, especially in cases of scleritis and keratitis.

I am strongly of the opinion that pyorrhea is a frequent source of eye lesions, and drastic treatment is warranted in these cases, and if necessary all foci of disease should be removed by the extraction of the offending teeth. There are many remedies for pyorrhea, but the most effective one is the removal of the teeth.

It is our duty in all obscure eye cases to examine the teeth. In doing this we will find one of three things. We will find teeth that are plainly pathological, we will find teeth that are plainly normal, or we will find teeth that are doubtful. The plainly pathological cases and the doubtful ones should be referred to a dentist with request for a complete examination and

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

pictures made not only of the teeth manifestly diseased, but of all the teeth, for sometimes we will find abscessed teeth that were not suspected. It is not wise to condemn unreservedly all dead teeth and the X-ray furnishes us with fairly dependable means of knowing those diseased teeth of this type. Often vital teeth will go unsuspected without a picture. On the other hand a negative picture of simply suspected teeth is not sufficient to exclude dental sepsis. We do not unreservedly condemn teeth. This occurs only when X-ray examinations are not made or to the disbelief of doctors in the value of such pictures. There is no excuse for this practice, if all dental films were passed upon by a competent dentist. One who is able to make and interpret his picture, this mistake would seldom occur. Under no circumstances should teeth be needlessly sacrificed, but when all evidence points to the teeth being the source of the infection they should be given immediate attention. As Dr. Beaumont says it is better to lose 32 teeth than one eye.

Mrs. R., age 62 years, came to me one year ago complaining of dimness of vision in the left eye. She stated that during the year previous she had been under the care of an internist who had searched for some constitutional trouble, the nature of which he failed to find. She underwent a number of examinations and was subjected to all the known diagnostic tests. Her malady failed to clear up. An examination of the eye disclosed a beginning uveitis with infiltration of the vitreous with some secondary iritis. Her teeth had all been extracted by a very competent dentist and we were assured that no local infection could exist. In spite of active treatment with atropin and dionin conditions grew worse. Exudates appeared on the posterior surface of the cornea. The iris developed several adhesions to the capsule of the lens and the vision was much reduced. On conviction that there was some necrosed bone on the left side, I asked for an X-ray picture, which disclosed a root from the left upper molar. This was removed and in a comparatively short time the eye was quiet and the vision became normal. This case shows the value of X-ray even in cases where the dental infection was supposed to be removed.

Another case—a boy, age 14, came with a mild type of choroiditis of obscure origin in the right eye. He had no evidence of

syphilitic or tubercular infection and except for the eye condition was apparently healthy in all respects. The influence of dental sepsis in this case was not suspected and no investigation was made at this time of the teeth. In six months the case came back with the choroidal lesion much developed. A careful examination was made of his teeth. A number of infected teeth on the left side were found from which a free discharge of pus could be obtained. These were extracted and the drainage from the roots—their bony cavities were most remarkable. The pupil began to react to atropin and signs of absorption of the inflammatory exudate and lessening of the ciliary congestion were evident. For awhile the eye made steady improvement and it was hoped the infection had been checked, but it soon became apparent that it was the seat of a deeper infection and this was rapidly followed by the active stage of panophthalmitis which finally necessitated its removal. The exceedingly rapid suppurative choroiditis in this case could only be attributed to the very virulent suppurative process in the dental region. I have been impressed lately with the fact that oral sepsis may be the cause of some cases of conjunctivitis with ulcers.

I have had two bad cases within recent period and in both cases the infection might readily have come from dreadfully septic mouths.

Some writers have made the suggestion that senile cataract is due to toxæmia, especially from the teeth. The two conditions are of course constantly associated in elderly people and you will be impressed by the number of cataract cases in which the oral sepsis is very bad. It is only a short step from premature rigidity of the lens to its actual opacity. The one condition certainly does occur. Why not the other as a direct result of old standing poisoning? This question can probably only be solved by the method of statistics. But I believe there is a substantial foundation on which to build. I will say that since my attention has been called to this I have seen very few cases of senile cataract in persons with good sets of teeth, and where lens opacities are present they advance very slowly.

In conclusion may I say that we, as specialists, should examine the teeth in all cases of inflammatory eyes and premature presbyopias for a possible and quite probable source of infection.

## INTRAOCULAR FOREIGN BODIES\*

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Every perforating wound in the eyeball is serious, not only because there is always danger of infection being carried to the contents of the eye, followed by abscess or destruction, but there is always the danger that a foreign body remains. No matter how small the foreign body may be or where it is located, the condition is serious, and only too often means loss of the eye.

With the great increase in all forms of industry throughout the country, and in spite of all precautions taken for prevention of injuries, there is probably a constant increase in the number of accidents to the eyes. In our own state, the oil industry contributes the greatest number of such accidents because of the great number of workers with iron and steel in the building of tanks, pipe lines and various other departments of the work. Also in the use of dynamite where carelessness or premature explosions, trap men in the range of flying particles, not only of metal but rocks, splinters of wood, dirt, etc. On the farms, with all kinds of farm machinery, the accidents are becoming much more frequent.

While we have no intention of dwelling on foreign bodies embedded in the layers of the cornea, in passing I wish to emphasize the necessity of treating every such wound strictly surgically and to discourage the practice, in our industrial plants, of attempts at removal.

Dirty hands, equipment such as horsehair, tooth picks, pocket knives, etc., contribute greatly in producing destructive ulcers which end in loss of the eye. It is just as important to use clean methods in corneal injuries as in any other branch of surgery. Any infection means more or less of a scar which, no matter how slight, interferes with the visual acuity.

To make an attempt to take up the subject of intraocular foreign bodies, with any degree of thoroughness in a short paper is almost impossible.

Foreign bodies of all sorts may be injected, through accident, into the eyeball, and all are almost equally dangerous unless removed. Where they carry infec-

tion, as is so often the case, the trouble starts almost at once, but in innumerable other cases the trouble is caused from the presence of the foreign body itself, which instead of lying dormant or peaceful, sets up frequent inflammatory attacks which sooner or later necessitates removal of the eye. In some instances to relieve the almost constant pain, but in others to prevent the possibility of sympathetic involvement of the other eye.

All types of foreign bodies are encountered in eye injuries and they are found in all parts of the globe. If located in the anterior chamber or in the lens, they can, as a rule, be seen and located without much trouble, unless in the case of a very small spicule of glass, which is very easily overlooked.

In other parts of the eye, many difficulties arise. The eye may be filled with blood, or an early exudate will interfere with observation with ophthalmoscope, an indispensable aid in localization. The X-ray in the hands of an expert is of the greatest help in localization, but unless properly used is very misleading. If any attempt at removal is made in vitreous foreign material, except in the case of magnetic objects the exact location is absolutely necessary, and even in the case of steel and iron, your procedure is simplified and offers more chance of success if properly located. Fishing jobs in the vitreous at best are extremely difficult and frequently fail, as well as only too frequently are followed by loss of the eye, even if you make a successful removal.

Dr. J. M. Patton of Omaha, associated with the Gifford Clinic, in the American Journal of Ophthalmology, February, 1927, has a very interesting article showing the mistakes often made in geometric localization and offering a method to prevent, in a great measure, mistakes made in those cases where ocular rotation may occur without detection. Very small flexible wire rings are fastened through the conjunctiva near the limbus before the X-ray is used and easily removed afterwards without any injury to the cornea. Where geometric localization is available, these rings are a great help in preventing mistakes by rotation during exposure. After definitely determining the position of the object and the material of which it is composed, an attempt at removal should be made at once, unless septic iridocyclitis or general sepsis has taken

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place. In such cases enucleation is always indicated at once.

If the foreign body is imbedded in the lens, it will probably be better to allow the cataract to completely form and then remove the entire lens. Where objects are located in anterior chamber, the procedure of removing is simplified greatly. If magnetic, the magnet will draw through the original opening if early, as a rule. If not, a small opening is made through the cornea near the limbus and the magnet applied. Where the object is embedded in the iris and cannot be disentangled with the magnet, an iridectomy including the object, had best be done. Frequently if posterior to the iris by directing the magnet tip in a position to dislodge, it can be coaxed out through the pupil and into the anterior chamber where it is removed as before. In non-magnetic objects, it will be necessary to make a larger opening in the cornea when a very small pair of forceps or hooks, will be used for removal.

In the last two years we have had two cases where an eye lash has been forced entirely through the cornea, lying loosely in the anterior chamber. These were removed by making an opening and extracting the hair with small forceps.

The greatest difficulty is with small particles of glass. It is frequently impossible to see and the X-ray fails to throw a shadow in most types of glass. The best way to detect glass which is lodged in the cornea, either superficially or deep, is with the slit lamp, if available.

Where the foreign body is in the vitreous, the condition is generally more grave and the prognosis, of necessity not so favorable. Occasionally, if magnetic, the object can be removed by the anterior route, by carefully using traction from the magnet along the course of entry. However, we have not advised this procedure, not only, owing to the difficulty in most all cases, but the additional trauma is probably more dangerous than the complications which may arise from the posterior or scleral removal.

By being very careful with the scleral opening, infection can be reduced to a minimum, then the greatest danger is from post operative retinal detachment. Unless there is already a scleral opening, which is rare, it will be necessary to make an opening. Select a point as nearly as possible to the location of the foreign body, back of the ciliary body and between the

muscle attachments. Make the conjunctival flap in such a position that the scleral wound can be thoroughly closed. By drawing this flap well back, the opening in sclera should be from before backward to prevent undue gaping and escape of the vitreous. If magnetic, the opening should be as small as possible, the point applied to the opening when practically always the operation is successful.

The smaller the opening in the retina and the less trauma produced, the less danger there will be of detachment, so that great care should be exercised in the incision and manipulation with the magnet.

If the vitreous foreign body is not magnetic, it may be possible to remove with forceps or small spoon, if definitely located. However, this is very difficult and in the majority of cases, will likely fail. The conjunctiva should be very carefully stitched over the opening, keeping your stitches well away from the scleral wound. If the scleral wound is very large you may close it with fine sutures in the superficial layers, being careful not to go through the entire thickness of the coat.

Following the removal of a foreign body from the eyeball, the patient should always be put to bed, a mild mydriatic instilled and absolute rest required for a few days.

If attempts at removal of the foreign body fails, you may sometimes delay enucleation for a time to see whether or not the eye will tolerate it without any inflammatory signs. When this experiment is decided on, frequent observation of the eye must be insisted upon. If there are signs of inflammation even of low grade, there will surely be some vitreous exudation which will interfere with the retinal function.

If by making frequent tests of vision, there is shown a gradual shrinking of the field with loss of light perception, together with a loss of normal tension, indicating a shrinking of the eyeball, enucleation must not be delayed, as there is always the possibility of sympathetic inflammation in the other eye.

In quite a percentage of penetrating injuries from foreign bodies, the lens is injured sufficiently to produce a gradually increasing opacity, with a complete cataract resulting.

When this occurs, if you have been successful in removing the foreign body you are faced with the problem of how best to

advise and handle the case. In this respect there is some difference of opinion and a number of things must be taken into consideration. The removal will undoubtedly increase the field of vision, even though objects are seen indistinctly. The cataract may become hypermature and difficult to remove. The eye presents a more natural appearance which frequently relieves embarrassment in sensitive individuals. This is more particularly true in women. To offset this there may be visual confusion of an annoying character, more noticeable in the older cases.

The diplopia, met with in numbers of cases, may be ignored in time, but in some cases, is permanent. A number of these eyes deviate, but I rather think, no more so, than where the cataract remains. A correcting glass cannot be worn as long as the other eye remains normal.

Fuch's states that where a traumatic cataract has been produced and later successfully operated upon, and the visual acuity brought to normal by a correcting lens, the eye is not adapted for binocular vision. Without the correcting lens, the eye sees too little and if the other eye has normal sight, the correcting glass is not borne. In such a case, therefore, binocular vision is abolished, in spite of there being an absolute visual power in both eyes.

So many of these accidents are industrial cases and the percentage of permanent visual defects must be determined. There is no doubt much injustice is being done to both employee and employer, in incorrectly estimating the disability.

In certain forms of service, the earning capacity is interfered with very little, even though the eye may be lost entirely, but the laws in this country fail to make any difference in estimating the disability.

In cases where there is only partial disability soon after injury the latent disturbances in the equilibrium of the eye muscles may become manifest and the eye squint. If this happens, the binocular single vision will be abolished and you can readily see there will be a decided difference in the percentage of loss of industrial vision, where there is a complete opacity of the lens, whether successfully operated or not, it is our contention that there is an industrial loss of vision in that eye. The vision without the glass is too little to be of any great use and if the injured person is unable to wear the correcting lens, even

though it gives normal vision, it cannot be taken into account to the detriment of the injured man's claim.

The subject of traumatic cataract is brought up in this paper because so many of the foreign body cases are complicated by injury to the lens, and as so many of the injuries are in industrial cases, we are called upon to determine the percentage of visual loss in establishing compensation.

The law fixes the compensation in most states on uncorrected vision and in these cases with rarely more than 20-260 vision and unable to wear the correction, we must confess total loss of one eye, even though the field may be increased.

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#### AN ABSTRACT OF THE LITERATURE ON TULAREMIA WITH A LABORATORY REPORT ON THREE CASES OF TULAREMIA FROM OKLAHOMA DIAGNOSED BY THE AGGLUTINATION TEST.

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*Definition and Historical:* In the last ten years Dr. Francis has through assiduous study and an overwhelming interest in tularemia made remarkable progress in this disease, the cause of which was unknown to bacteriologists and a mystery to the medical profession.

Tularemia, as Dr. Francis describes it, is "a specific infectious disease due to *bacterium tularense* and is transmitted from rodents to man by the bite of an infected blood-sucking insect or by the handling and dissecting of infected rodents by market men or laboratory workers."

The disease was first described by Dr. Ancil Martin of Phoenix, Ariz., in 1907, who called it a rabbit septicemia. In October, 1910, Dr. R. A. Pearse read a paper on the disease before the Utah State Medical Association. In Utah tularemia had been known as deer fly fever because it was thought that the disease was due to the bite of the blood-sucking fly, chrysops discales, which is found on horses. In the next ten years, 1910 to 1920, Francis and Mayne proved that the deer fly was a carrier of the disease. Among the pioneers in the field who attempted to get at the cause of

tularemia were McCoy and Chapin. They discovered and named the organism which was the cause of a tularemia epidemic in Tulare county, Calif., among ground squirrels in 1912. Credit for observations on the first human case is given to Vail and Sattler in 1913 and 1914. Bacterium *tularensis* was isolated from these cases by Wherry and Lamb by inoculating the conjunctival secretions into guinea pigs. In 1919 and 1920 Francis isolated *B. tularensis* from severe human cases and 17 jack-rabbits and named the disease tularemia after Tulare county, Calif., where the pioneer work of McCoy and Chapin was done on ground squirrels.

*Carriers of tularemia:* Insects and animals play important roles in the transmission of tularemia. Among the most important carriers are:

1. Ticks: These insects carry the organism from rabbit to man, and rabbit to rabbit and help perpetuate the disease. Adult wood ticks, *Dermacentor andersoni*, were collected in May, 1923, from vegetation in Montana. These, when injected into guinea pigs, caused acute death with typical lesions from which *B. tularensis* was isolated on culture. Nymphal ticks which had been infected as larvae by feeding on guinea pigs infected with tularemia transmitted the disease to healthy animals as late as 247 days after they had fed on the sick animals. Adult ticks have been known to carry the infection for 199 days after they have fed on infected animals. Another reason why ticks are so dangerous as carriers of tularemia is that the disease is transmitted by the females to the eggs and persists throughout the larval and nymphal stages. The tick is considered a true biological host of tularemia because it harbors *B. tularensis* in the epithelial cells of the digestive tract, the malpighian tubes, and coelomic fluid. The organism is absent however from the salivary glands.

2. Bedbugs: The bedbug is not ordinarily a carrier of tularemia. In the laboratory this pest will carry the plague from one mouse to another mouse, but no human cases have been recorded where the bedbug was carrier. Mice devour living and dead bedbugs and in that way become infected. Few infections result from bites.

3. Meadow mice: The infection among meadow mice is spread by the mites which these animals are infested with.

4. Birds: At one time it was observed that ruffed grouse and rabbits died in great numbers during the same season. The rabbit tick, *Haemaphysalis leporis-palustris*, is the important carrier here. It is found on game birds and grouse. These animals acquire the disease like guinea pigs and rabbits in the laboratory.

5. Ground squirrels: Tularemia was first known to occur as an epizootic among ground squirrels.

6. Rabbits: The greatest reservoir and source of human infection is the wild rabbit. Jack-rabbits, cottontails, and snow shoe varieties all carry the disease. These animals acquire tularemia from flies, ticks and other blood-sucking agents which transmit the infection to them by biting them. Tularemia also occurs as an epizootic among rabbits.

7. Miscellaneous carriers: Francis reports that wild rats carry tularemia. He had one case which was traced to a bite from a coyote, another to a bite from a hog, six were associated with sheep and the ticks infesting them which had become contaminated around the mouth parts by feeding on rabbits found dead nearby.

*Seasonal Incidence of Tularemia and Source of Infection:* The seasonal incidence of tularemia is due to the seasonal variation in the tick bite, fly bite, and the dressing of wild rabbits. But because these causes overlap tularemia cases are prevalent all the year round.

1. Fly bite: June to September is the season of greatest activity of the horse fly in Utah and the surrounding states.

2. Tick bite: From March to August ticks are most active in Montana, Arkansas, Texas, Oklahoma and Louisiana.

3. Dressing of wild rabbits: East of the Mississippi river November, December and January is the "open season" for game hunting. Cotton-tails are dressed for food and fed to domesticated animals also. West of the Mississippi river jack-rabbits are considered pests and are not protected by game laws. In this locality April to October marks the onset of tularemia. It is the season for skinning jack-rabbits for table use, fish bait and coyote bait.

Tularemia has never been found in mature in domesticated animals, or in those raised in rabbitries.

*Market infections:* In the winters of 1923, 1924 and 1925, Francis examined the

livers of 1000 rabbits and found nine or less than 1 per cent infected with tularemia. Infected livers are studded over the surface with small spots varying in size from a pin point to 1-16 inch in diameter. Of 22 cases reported 17 had dressed wild rabbits from the market. Four dressed rabbits they had shot, and one dressed a rabbit killed with a club. Cases of tularemia have been reported in uninfested areas like Chicago and are usually traced to the dressing of rabbits. The highest incidence of tularemia occurs among butchers and poultrymen. These people dress hundreds of rabbits in a season and often have scratches and cuts on their hands thus providing a portal of entry for the organism.

*Distribution and Mortality:* In 1920, of the 420 cases reported to the public health service, 17 died, giving a mortality of 4 per cent. Up to that date cases had been reported from 37 states, Washington, D. C. and Japan, where tularemia is known as Ohara disease. No cases have as yet been reported from the nine northeastern states. From its distribution tularemia appears to be an almost entirely American disease. Ohara is trying to show that tularemia and Ohara disease are closely related or perhaps the same disease. He found that *B. tularensis* and the Ohara-Haga coccus resemble each other in many respects, and that the lesions they produce in laboratory animals are similar. *B. tularensis* agglutinated strongly the serum from a patient with Ohara disease.

#### *Degrees of Susceptibility:*

1. High in man, monkeys, ground squirrels, rabbits, guinea pigs, mice, wood chucks, opossums and young coyotes.

2. Slight in rats, sheep, cats and goats.

3. None in horses, cattle, hogs, dogs, pigeons and chickens.

*Clinical Types of Tularemia:* Usually an infection due to a rabbit comes from an injury on the hand which provides a portal of entry for *B. tularensis*. There are, according to Francis, four clinical types of tularemia:

1. Ulcero-glandular where a primary lesion or papule which later becomes an ulcer develops on the infected spot and is accompanied by enlargement of the regional lymph glands.

2. Oculo-glandular with the primary lesion a conjunctivitis accompanied by an enlargement of the regional lymph glands.

3. Typhoid type which runs a persistent fever with no primary lesion.

4. Glandular type with no primary lesion but enlargement of the regional lymph glands.

The most common types are the ulcero-glandular and the typhoid.

In the ulcero-glandular type the incubation period is from 2-5 days. The onset is sudden and is manifested by headache, chills, pains, vomiting, prostration and fever. Forty-eight hours after the onset the patient has pain in the area of the regional lymph glands which become tender and slightly enlarged. About 24 hours after glandular pain sets in the lesion on the site of infection swells and becomes an inflamed papule which steadily breaks down liberating a necrotic core and leaving an ulcer about 1-4 inch in diameter with raised edges and a punched out appearance. Fever lasts two to three weeks and may reach 104 deg. F. The glands may break down or remain hard, palpable and tender for two to three months returning gradually to normal. The blood count is of no diagnostic value although it may show a slight lymphocytosis. Agglutinins are absent in the blood in the first week of the disease. They appear in the second week and in the third and fourth weeks the maximum agglutination titer has been reached. Then there is a decline but the agglutinins persist for years. Convalescence is protracted and attended with weakness which is conspicuous symptom. For complete recovery six months to a year is needed. Death is rare.

The typhoid type has been known to occur only in laboratory workers. There is no site of infection or enlarged glands. Otherwise it is like the glandular type. Everyone who has worked with *B. tularensis* has become infected. The portal of entry in these cases is supposed by Francis to be the unbroken skin of the hands. Francis was able to infect guinea pigs with tularemia by gently placing some spleen juice from an infected animal on the unclipped, unshaven, unabraded and unrubbed skin.

*Bacteriology of Tularemia:* Tularemia is caused by the *bacterium tularensis*, a rod shaped organism 3-7 mu. in length and 2 mu. wide. In the body tissues it seems encapsulated. It grows scantily on serum glucose agar, glucose blood agar and blood agar unless a piece of spleen tissue is added. Then there is an abundant growth. It

needs a Ph. of 7.3. Francis believes that "coagulated egg yolk, carefully prepared is still the best medium for routine isolation and cultivation of *B. tularensis*." Pus from broken down glands, conjunctival secretions and curettements from ulcers injected into laboratory animals will yield cultures of the organism. Pure cultures of *B. tularensis* can be isolated from the blood, spleen, liver and lungs of animals dead with tularemia.

*Diagnosis of Tularemia:* To diagnose tularemia the following points should be kept in mind:

1. History of contact with rabbit, fly or tick.
2. Primary lesion of skin followed by ulcer, or conjunctivitis, followed by ulcers.
3. Persistent glandular enlargement in the region drawing infection.
4. Fever of two to three weeks duration.

Microscopic examination of cover glass preparations and cultures directly from the patient are useless for diagnosis. The final diagnosis of tularemia rests on the isolation of *B. tularensis* from guinea pigs inoculated with material from the lesion, glands, or blood of the patient; or on the agglutination of a stock culture of *B. tularensis* with the patient's blood serum. This is a reliable test and is used by the Hygienic Laboratory of the U. S. P. H. S. as a routine test on suspected sera. In a case reported by Brosius the patient's serum agglutinated *B. tularensis* in a dilution of 1:160 eighteen years after infection.

*Technic of the Agglutination Test:* The complete technic is given in the Public Health Reports for June 25, 1926. Because of the frequent cross agglutination between tularemia, abortus and melitensis, suspected sera of tularemia or undulant fever should be tested for agglutination with *B. tularensis* and either abortus or melitensis, unless the clinical history is definite. The highest titer is decisive. On serum which agglutinates all three organisms an agglutinin absorption test should be done. Dr. Francis found that normal rabbit serum and serum from rabbits immunized against typhoid, paratyphoid fevers, and sheep cells did not agglutinate *B. tularensis*. Sera from patients with typhus, tuberculosis and syphilis do not ordinarily agglutinate *B. tularensis*.

*Treatment is Symptomatic.* Rest in bed is most important. Enlarged lymph glands

should be incised only after suppuration has been well established. So far no vaccine or curative serum or drug has been found which will cure tularemia.

*Prevention:* There is at present no prophylactic for tularemia. An attack of tularemia confers immunity in man, but for how long a period is not known. Francis reports the case of a laboratory worker who got a second infection two years and five months after the first.

A few ordinary precautions can be taken by most persons to prevent tularemia:

1. Rabbit meat well cooked is harmless. A temperature of 65 deg. C. or 133 deg. F. kills *B. tularensis*.
2. Ordinary disinfectants are effective against *B. tularensis*.
3. Rubber gloves should be worn when dressing wild rabbits or if possible an immune person should be employed.
4. Infected rabbits which have been frozen for 30 days are harmless.
5. Market inspection is not very practical because only 10 per cent of the rabbits on the market have the liver left in place.
6. The wild rabbit which a cat or dog brings in or which a boy kills was probably sick and should be left alone. Only rabbits shot on the run at 75 yards or so are safe.

*Tularemia Peritonitis:* Fulmer reports a case which developed abdominal complications. Until that time, three months after the initial infection, the disease had run its normal course. *B. tularensis* was isolated from the ascitic fluid in this case for the first time in the history of tularemia.

Tularemia has been diagnosed by clinicians as anthrax, glandular farcy, typhoid, septic infection, cholangitis, actinomycosis, bone felon and "flu." Serologists have called it undulant fever, and because of the appearance of the lesions in the lymph glands pathologists have taken it for tuberculosis.

*Laboratory Reports of Agglutination Tests on Three Cases Which Occurred in Oklahoma:* Dr. Wilhite of Payne county, Oklahoma, sent in three specimens of serum from three patients who had had an infection resembling tularemia a year or more before the time the specimen of blood was taken. The serum of No. 1 agglutinated *B. tularensis* in a dilution of 1:320. The

sera of No. 2 and No. 3 agglutinated *B. tularensis* in a dilution of 1:160. The three cases occurred in Payne county and were traced to the dressing of wild rabbits.

#### *Summary and Conclusions:*

1. Tularemia is a specific non-contagious infection caused by *B. tularensis*.

2. Tularemia has a great variety of insect and animal hosts and is transmitted through heredity to the eggs of the tick by the female.

3. Tularemia has a seasonal occurrence in various localities. Only the nine north-eastern states are free from it.

4. It follows the dressing of infected wild rabbits and is common among butchers and poultrymen.

5. So far, excepting for the Ohara disease of Japan, it has proven to be an entirely American disease.

6. The mortality from tularemia is only 4 per cent.

7. Man is highly susceptible to tularemia; horses, cattle, dogs and hogs are not at all susceptible.

8. There are four clinical types of the disease known.

9. *B. tularensis* will grow on a variety of media, but grows best on coagulated egg yolk.

10. The best methods for making a diagnosis of tularemia are isolation of *B. tularensis* or by the agglutination of *B. tularensis* with the patient's serum.

11. There may be cross agglutination with abortus or melitensis.

12. The agglutinins persist in the blood long after recovery.

13. Treatment is symptomatic. There is no tularemia vaccine, but the disease can be prevented.

14. Laboratory workers handling live tularemia cultures are sure to become infected. *B. tularensis* penetrates the unbroken skin.

15. There has been a case of tularemia peritonitis reported by Fulmer. Tularemia has been mistaken for many other diseases.

16. Three cases have been diagnosed in Oklahoma more than a year after they occurred by the agglutination test.

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#### MERCUROCHROME TREATMENT OF PURULENT MENINGITIS\*

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Purulent meningitis is an inflammation of the meninges with purulent spinal fluid. It may be caused by practically any of the pyogenic organisms. We are reporting in this article two cases of meningitis following the flu and one with no known etiology, as no bacteria was demonstrated, neither by smear nor by culture. The patient gave no history of having had the flu nor any other recent illness.

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

The treatment that we wish to record is the use of mercurochrome in purulent meningitis. Case number one had no other treatment. The other two cases, or cases number two and number three, also had spinal puncture. Case number one is interesting particularly, in that the usual treatment of spinal puncture was not used. Especially interesting as the mortality in purulent meningitis under any treatment heretofore used is very, very high. Josephine B. Neal, in Volume 10, Tice's Practice of Medicine reports only four cases recovered out of 1259. One of these was influenzal meningitis, one a staphylococcic, another a meningococcic and staphylococcic and last a streptococcic meningitis.

*Case No. 1.* A case of Dr. D. P. Richardson, Union City. A white male 11 years of age, in January, 1927, fell about six or eight feet from a hay mow striking his head on the dirt floor. He was up immediately and attended school the next day. No symptoms developed. Two weeks later he came down with an attack of illness diagnosed clinically influenza. The symptoms were typical. He quickly recovered and returned to school. Two weeks following the influenzal attack he became very ill, with all the classical symptoms of purulent meningitis, high fever, vomiting, delirium, opisthotonos, positive Kernig's sign, exaggerated reflexes and stiffness of the neck. There was no spinal puncture, therefore no laboratory work on this case. A clinical diagnosis of purulent meningitis of an influenzal type was made. The patient gradually cleared up after intravenous administration of a 1 per cent solution of mercurochrome. Three doses were given in all, the initial dose of five cubic centimeters and the second dose of ten cubic centimeters two days later. Following the second injection the boy had a very marked reaction. As this reaction cleared up the symptoms of meningitis also cleared. During his attack of meningitis he developed an iritis of the left eye which persisted for some time after he was up and around. He had no other complications and is now in perfect health.

*Case No. 2.* This is a case of Dr. Paul E. Haskett of Oklahoma City. A seven-year-old girl had influenza in March, 1927, quite severe, keeping her in bed about two weeks. She recovered fully from this when on April 26, 1927, twelve days after her recovery from the flu, she was stricken with the measles, having high temperature

for two days and then the ordinary course of measles, except that it kept her down about three weeks. She became very nervous the last week of her attack of measles, also drowsy and quite irritable although up and about the house at this time. It was noticed that her face was very flushed, her temperature was taken, which was 106. On the second day of this attack she was stuporous, temperature ranged from 102 to 105. A few hours later she became delirious and the same night had convulsions. At this time Dr. Haskett called a consultant who agreed with him as to the diagnosis of meningitis. At the beginning of the third day she developed opisthotonos. Convulsions, restlessness and the pain in the head continued. The first spinal puncture was now done, the fluid was very cloudy and under marked pressure. The removal of 20 to 25 cubic centimeters of spinal fluid relieved the convulsions and headache. The temperature ranged about 101 to 103 at this time. Opisthotonos and stiffness of the neck continued. The patient seemed improved on the fourth day, took nourishment, appeared brighter and slept fairly well. The headache grew very severe on the sixth day and spinal puncture was again done and was repeated every forty-eight hours, making eight spinal punctures in all. The severity of the headache was relieved by these punctures. From the sixth day to the fourteenth day she continued to have the normal course of any case of meningitis, one day appearing better, the next worse. The writer was called on the fourteenth day in consultation, agreed with the diagnosis and recommended the use of mercurochrome. At this time the patient was still in opisthotonos and very low.

Five cubic centimeters of a 1 per cent solution of mercurochrome were administered intravenously with little or no reaction and no apparent improvement. The second day later five cubic centimeters of a 1 per cent solution of mercurochrome were given. The reaction was very marked within forty minutes after giving this dose of mercurochrome but as the reaction subsided the patient showed improvement, although the stiffness of the neck and opisthotonos did not entirely disappear until the end of the twenty-first day. Four doses of mercurochrome were given in all. The patient had no reaction from the third and fourth doses. Each dose was given after a forty-eight hour interval. The pa-

tient entirely recovered with no complications, mental or otherwise.

*Case No. 3.* A case of Dr. Paul E. Haskett, Oklahoma City. William Lawrence, a boy 10 years of age, took sick on July 1, 1927, with chills, fever, stiff neck and opisthotonos, soon followed by paralysis of the muscles of one side of the face and neck, with regurgitation of all food and water. He had to be fed through a nasal tube.

Treatment: July 4, twenty to twenty-five cubic centimeters of cloudy spinal fluid under pressure was withdrawn. On July 5, five cubic centimeters of a 1 per cent solution of mercurochrome were given intravenously. This caused considerable reaction, patient having a chill, followed by temperature of 104. On July 6, five cubic centimeters of a 1 per cent solution of mercurochrome were given intravenously with no reaction.

On July 7, the second spinal puncture was done, withdrawing about twenty to twenty-five cubic centimeters. The fluid was much clearer and under less pressure at this time. On the 8th the third and last injection of five cubic centimeters of a 1 per cent solution of mercurochrome were given with no reaction. On the 9th the third and last spinal puncture was done, bringing clear fluid under very little pressure. The improvement of the patient at this time was very marked. He was again able to take food by mouth. There were very few symptoms remaining on the 10th and none on the 11th. The patient was discharged, apparently well.

So far as we know personally and as far as we are able to find from the literature mercurochrome has never before been used in the treatment of purulent meningitis. Three cases are not enough to establish the claim that it is a specific or even that it is better than any other treatment. Considering the high mortality, however, we do believe that its successful use in three consecutive cases, with no mortality, warrants us in recommending it to the profession for further use, so that after a hundred or more cases have been treated with mercurochrome we can draw our conclusions as to its real or relative merits.

## FOCAL INFECTION FROM PARANASAL SINUSES\*

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ENID

A suspicion or diagnosis of infection of the above named cavities previous to the past ten years was mostly only considered by one doing eye, ear, nose and throat work. He being consulted by the patient who presented the symptoms of pain, pus and swelling, but now, with more cooperation between the internist, urologist and pediatrist we have found that there are a great number of organic diseases resulting from sinus infection, in which there are no subjective symptoms of sinus involvement other than constant nasal or posterior nasal discharge, especially is this true of maxillary sinusitis.

It is fairly easy to make a diagnosis of an acute frontal or maxillary sinusitis, due to the usual accompanying symptoms of pain, tenderness on pressure and slight temperature, but of the chronic cases which are more prone to give us a foci of infection, it is not so easy, as the local subjective symptoms are slight or absent, and we have to make a diagnosis from inspection of the nose and naso pharynx after shrinking the tissues and make use of negative pressure to withdraw pus, or find polypi and hypertrophy of tissue. Also use transillumination and the X-ray, but I dare say that we all have had difficulty in making a diagnosis of chronic sphenoiditis even with the X-ray, however, I believe in the future with the X-ray technique as used and given by Granger, which gives a constant stable line that is changed only when disease is present, we will be able to diagnose disease of this sinus with certainty.

The possible symptoms and more or less local effect may be enumerated as follows: nasal discharge, nasal obstruction, epistaxis, sneezing, constant colds, pharyngitis, catarrhal, deafness, dizziness, cervical adenitis, especially in the posterior triangle, chronic cough with lung pathology, pain in the face and teeth, recurring fever, sallow complexion, irritability, poor school progress, malnutrition, gastro intestinal disorders in children, hypersensitiveness and nervousness.

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association Tulsa, May 17, 18, 19, 1928.

The foregoing enumerations represent a complication from the literature to which reference has been made. Of course, only, a few of these conditions will be found in any one patient, although they are to be found in almost any combination.

The subject of this paper does not permit of extensive consideration of the etiology or treatment, except to state that they are mostly caused by colds in the head or infection of the nose, throat, or pharynx extending into same, with the exception of maxillary sinusitis, 50 per cent of which is of dental origin according to E. C. Hume, D.D.S., Louisville, Kentucky. But my observations have been that not more than 25 to 33 1-3 per cent are due to dental origin. The 50 to 75 per cent of antrum cases not of dental origin, are results of the above named infections, which seldom entirely clear up and remain a potential factor in focal infection.

Most of the chronic cases assume importance from a focal rather than from a local standpoint, the following diseases having been shown to be caused or aggravated by a chronically infected maxillary sinus, pharyngitis, laryngitis, asthma, bronchitis, bronchiectasis and pneumonia. Among other diseases proved to sometimes result from sinusitis, all of which may of course be due to other foci, as well may be cited the following, cardiopathias, nephritis, pyelitis, rheumatism, neuritis, retrobulbar-neuritis, retinitis, uveitis and iritis.

In a review of 500 cases of maxillary sinusitis by Drs. Lockard and Argall of Denver, nearly one-third of the patients with uncomplicated maxillary sinusitis were unaware of any nasal disease other than recurrent and persistent colds in marked contrast to those with frontal, ethmoid or sphenoid involvement and in the maxillary cases constitutional symptoms were more generally the rule. In children we have, in addition to the above, chorea, anemia, malnutrition, digestive disturbances, cyclic vomiting, nervous instability and deforming arthritis.

Louis H. Clerf of the Jackson Clinic, Philadelphia, states that in most chronic cases of bronchitis and all bronchiectasis they have found a chronic antrum infection, which is most impossible to clear up until the sinus is freed of infection. Mullin and Rider claim to have definitely established a lymphatic route which connects the paranasal sinuses with the bronchi and

lungs via the lymph nodes and vessels, lymphatic ducts, veins and right side of the heart. I wish to cite the following cases which I have recently had under observation:

E. McC., age 8, April 16, 1928.

*Chief complaint:* Child has had a hacking cough for about three years, constant expectoration of yellowish phlegm. Nasal discharge, white in color, foul odor. This discharge from nose was worse at times. Child is somewhat deaf. Has some stomach disorders. Complains of eyes watering at times. Past History: Fairly good health. No accidents; tonsillectomy and adenoidectomy three years ago for relief of above trouble. Childhood diseases with good recoveries. Slight influenza four years ago. Family History: neg., physical exam. temp. 99.2, urine neg., head and neck. Right maxillary sinus cloudy on transillumination and with X-ray. Posterior nasal discharge. Piece of tonsil in upper right fossae. Ear drums dull looking, cone of light absent. Chest: Bronchitis, bordering on bronchiectasis of lower part of left lung. Treatment consisted in window resection made underneath lower right turbinate into right antrum under general anesthesia. Forty-eight hours later sinus was irrigated with quite a lot of curded pussy material obtained. Washed every 48 hours. May 9, 1928. Patient still under treatment, much improved, temperature normal, posterior nasal discharge and cough about cleared up.

Joseph W. Miller calls attention to the frequency with which patients, suffering with some cardiopathy, have chronic maxillary sinusitis without any subjective symptoms referable to the sinus involvement. The following case, I believe, will substantiate his observations:

Name D. D., age 15, January 17, 1928.

*Chief complaint:* Pain in knees and elbows. Discomfort in left chest which was worse on exertion, tires easily. Complains of shoes being very tight and uncomfortable in late afternoon and evening. Posterior nasal discharge which caused a constant clearing of the throat. Past history: Health has only been fair. Has had many colds and frequent sore throat up until about four years ago when tonsillectomy and adenoidectomy was performed. Had scarlet fever about five years ago with good recovery, no complications. Patient developed a bad cold about Dec. 25, 1927.

accompanied with severe pain in right side of face and head which lasted about three days and was diagnosed as sinus trouble by her family physician.

*Physical examination:* Head and neck. Right antrum cloudy both on trans-illumination and X-ray. Pus discharge in nasopharynx. Temp. 99.4, pulse 90, resp. 24. No head discomfort except posterior nasal discharge. Heart: Myocarditis with moderate hypertrophy of heart and mild mitral regurgitant murmur. Chest and urine negative.

*Treatment:* Patient put to bed in hospital. Digitalis prescribed. Under local anesthesia window resection under right lower turbinate, on January 18, 1928. Right antrum irrigated with quite a lot of curdled looking pussy material obtained. Antrum irrigated every other day. Patient made a gradual improvement, leaving hospital on February 3, 1928, with normal temperature, heart murmur barely audible, edema of feet and ankles almost cleared up, good general improvement. Patient kept quiet at home, following dismissal from hospital. Was seen at intervals from ten days to two weeks with absence of arthritic pains and edema of feet and ankles and continued general physical improvement.

In 1923 Marriott and Clausen pointed out the relationship between sinus infection and parenchymatous nephritis (nephrosis) all of the nephrosis cases in children that were studied had sinusitis and the causative organism was found to be staphylococcus.

The inter-relationship was shown by the prompt disappearance of albumin and edema with free drainage of the sinuses.

In 1925 Aldrich reported three patients with nephrosis, in all of whom sinusitis was found. Jean, Department of Pediatrics, University of Iowa, 1926, reports three cases of nephrosis, all with maxillary sinusitis, one with streptococcal infection died of septicemia, the other two with staphylococcus infection promptly cleared up with sinus drainage.

The inter-relationship between hemorrhagic nephritis and infection is undisputed. The infectious organism probably is a streptococcus in all instances and its source is usually the tonsils. However, several writers have reported cases in which the sinuses seemed responsible and

the following cases will serve to illustrate the same:

H. B., age 10 years, Dec. 19, 1924. Acute hemorrhagic nephritis, urine bloody, many casts, patient improved with rest in bed, diet and internal medication. Feb. 10, 1925, with negative urine, chronic infected tonsils were removed, immediately following operation signs of nephritis reappeared which cleared up in two weeks. April 8, 1925, patient returned with bloody urine. April 18, 1925, sinusitis was diagnosed. Both maxillary sinuses drained followed by a mild exacerbation of kidney symptoms. Within two weeks all evidence of symptoms absent, which have remained so until last seen in February, 1926.

In the presence of rheumatic fever, chorea, heart disease and kidney infections, one is in the habit of thinking first of the lymphoid tissue of the throat as a site of an infectious foci. Nevertheless everyone is familiar with the failure of tonsillectomy to secure relief and prevent recurrence in many instances. Two such examples are cited by Jean.

D. S., age 9 years, had chorea of four months duration. She had had a complete tonsillectomy and adenoidectomy at the age of 7. In addition to chorea, she was found to have a moderate secondary anemia and to be ten pounds under weight. As foci of infection, every paranasal sinus was found filled with pus, so thick in the maxillary sinuses that it was aspirated with difficulty.

G. Y., age 7 years, had chorea, the tonsils had been removed, but some small stumps remained. In addition to the chorea there was a moderate mitral insufficiency, well compensated and apparently inactive. The girl was markedly under weight and had secondary anemia. Chronic ethmoiditis was diagnosed. In about a month she had recovered completely from chorea, and seemed to be in excellent condition. The patient seemed to be quite well for two months, when she began to have fever and cough. After ten days of illness, she was seen again and found to have acute endocarditis. No possible focus was found except the sinus disease which had persisted. Convalescence was rapid following active treatment of this infection. Six months later this patient was in good health and had had no recurrence of any rheumatic manifestation.

Dean calls attention to the frequency of sinus infections alone or co-existing with middle ear and mastoid infection, causing nephrosis, nephritis, cardiac lesions, rheumatic fever, chorea, cyclic vomiting, anemia, bronchiectasis, asthma and cholera infantum symptom, complex, saying that if the condition of the patient is not too urgent, it should be dealt with conservatively by use of ephedrin and argyrol, but in bad cases of dehydration, rheumatism and heart lesions they should be punctured and washed and some that do not yield to this, must be dealt with in a radical way. He cites several cases in which various systemic diseases have been helped and cured by sinus treatment.

In my experience and from information I have gained from the literature, infections arising from the frontal, ethmoid and sphenoid sinuses, involve mainly the brain and the eye and its adenexa.

I will not waste time by citing the various infections or diseases of same, that may result from a focal infection of these sinuses of which you are all aware, but do wish to call your attention to the valuable work that is being done by M. E. Brown of New Orleans, on ocular infections from the sphenoid, the diagnosis of certain types he claims was impossible until Granger perfected his technique with the X-ray, to the extent that he can diagnose with certainty whether the sphenoid sinus is negative, polypoid, empyemic or hyperplastic.

He especially calls attention to the hyperplastic type the symptoms of which do not differ from the classical sphenoid syndrome, except that rhinological examination is negative and the diagnosis must be made by X-ray.

The eye findings are, central vision normal, color perception normal; peripheral fields concentrically contracted, both for form and color, as low as the 10th meridian in some cases, with no demonstrable pathology in the fundi. Both eyes are usually diseased, with the greater contraction being on the side in which the sphenoiditis is present. In a series of 27 cases studied for a symposium on sphenoiditis, held recently by the Ophthalmological, Rhinological and Otolaryngological Society of New Orleans, the radiologist confirmed each diagnosis without a history. The cases were all handled surgically and the percentages of improvements and cures were 74.3 per cent.

## CONCLUSION:

There are a great number of patients who have diseased sinuses, which cause various systemic diseases without subjective symptoms referable to the sinus.

That we are not giving our patient the best service, when we examine the upper respiratory tract and find one source of infection and do not eliminate other possible foci.

Nothing original is claimed for any of the observations presented, but if this review serves to attract more attention to this phase of focal infection our time will have been well spent.

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## INJURIES OF THE EYE\*

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With years in the practice of medicine come interesting as well as unusual occurrences. This is true as much in the oculist's practice as in any other line. Each year the doctor will see many strange, sometimes unusual accidents. Some may be comedy, others tragedy, depending entirely upon the individual involved as well as the nature and extent of the accident itself. From the oculist's standpoint any accident involving the eye is always looked

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association Tulsa, May 17, 18, 19, 1928.

upon as being a dangerous condition with which to deal and treats it as such.

Injuries to the eye vary in severity as well as the ultimate reparation. Many things enter into the favorable or unfavorable results of the injury. The home surroundings, the vocation, the location of the injury, both as regards place where it happened and the conditions surrounding its occurrence as well as the location of the injury to the eye itself will often times play a very important part in the recovery of the patient. The physical and mental condition of the injured person will sometimes play quite an interesting part as we know. The aged or the person who has just undergone or is undergoing a protracted illness is more liable to have an unfavorable and disappointing result than one robust and youthful. The mentally deficient or ignorant are very hard to treat, the "wise guy," the one with a "little learning," one with a doting grandmother as well as that individual who has a Doctor or druggist friend who disregards the treatment of the oculist and makes recommendations of his own and as a consequence destroys the morale and tends to unfavorable result. But why burden you with all this which you, too, have learned from experience.

Those of you who are fortunate or unfortunate enough to live and practice in an industrial center know the majority of eye accidents are of industrial origin, ranging from simple to the most severe, and since the creation of *The Industrial Commission* we are treating more and more of this kind of accidents because of the compensation law. Not that the law has had any tendency to cause more accidents, but the employers are paying more and more attention to accidents no matter how trivial they at first may seem. But not all severe eye injuries are necessarily of industrial origin, as I am sure some of the most destructive injuries I have had were far removed from industrial pursuits. No one is immune.

I am not going to detail any symptoms or any line of treatment but shall instead confine myself to the detail of a few of the many eye injuries encountered, taking up some of the occupations and accidents occurring in that particular line of work.

When statistics show us there are more than 125,000 blind persons in the United States, the major portion of whom were

blinded by accidents, most of them preventable, it is indeed tragedy and an economic problem which calls for serious consideration, not only from the oculist, but from thinking laymen as well, and when employers are brought to a realization of the necessity of protecting and providing safeguards for their employees who might receive an eye injury then a forward step has been made in reducing the number of eye injuries with which we have to deal. The same thing applies to employees as well and to all others liable to eye injuries.

Some of the people most liable to injuries of the eye are as follows: quarrymen, physicians, dentists, railroad men (those in the operating department or those handling trains) section-laborers, miners, mechanics, battery men, cowboys, carpenters, common laborers, stone masons, baseball players, telephone and telegraph employees (construction men), and many, many others.

Accidents to the eye may be classified under two headings, industrial and household accidents. I will not attempt to differentiate between the two, but will merely give you some of the usual as well as unusual accidents to the eye found in these two classes.

Before the advent of oil burners on our railroad systems the most frequent accidents met with was that of a cinder in the eye, instead of them being common now they are rather rare while it is not infrequent now that we have a fireman, engineer or brakeman who is injured by having sand from the flues blown into his eye. During the summer time a great many people are injured because of insects getting into the eye. Acids and alkalies cause quite a few eye injuries especially among those working with or dealing with automobiles and radio batteries, the same being true of chemists and students in chemistry.

A number of times I have been called upon to treat an individual who had put iodine into their eye, thinking they had gotten hold of the argyrol bottle. While I have seen no serious results following this procedure yet it is quite painful and calls for immediate attention.

One of the most distressing as well as painful and destructive accident to the eye is a finger nail scratch or cut. I have seen a great many of these where a mother or a nursemaid had been struck in the eye by a baby's finger nail.

Fireworks, firecrackers and toy cannons, as well as the backfire or explosion of a gun, exacts its toll each year among the children as well as adults.

I believe the most horrible eye accidents I have seen have been caused to small children by dynamite caps. The usual story runs about like this. Some blasting work had been going on and the caps had been placed at some point where they thought they were safely hidden, but the child found the cap, placed it on a rock and hit it with another rock or hammer with the result that one or both eyes were permanently destroyed and usually a hand or even both hands sacrificed. I think it would be in order for this association to go on record demanding some law whereby those handling or dealing in dynamite caps should account for each cap the same as the dealer in opium and its derivatives are compelled to account for each grain that comes into their possession.

Since bobbed hair has become the prevailing style, burns of the eye from the old-fashioned curling irons are now very rare.

Each year the oculist sees entirely too many youngsters injured by B.B. guns, "nigger-shooters," and beanflips, as well as hunters during the bird season who have gotten a stray shot from his hunting partner's gun.

Broken spectacle lens cause quite a few injuries, as well as glass in the eye from broken bottles or windshields.

Wood alcohol every year exacts its toll not only from drinking but from patent face lotions as well as scalp application.

The use of face powder among the women having increased several thousand per cent in the last few years, has played a part in the production of eye injuries.

A very frequent cause, especially among workers with steel or iron in any capacity, is the production of an injury by getting steel in the eye, this is always a grave condition and causes serious results.

Premature blasts happening to miners, quarrymen or well diggers exacts its toll yearly.

Workers with emery wheels should at all times wear protective goggles. Short circuits among electrical workers and oxy-acetyln welding demands protective goggles. Wood choppers, saw-mill workers,

cabinet workers, etc., should also have protective goggles.

Each year we have a number of people injured because of being struck in the eye by a nail or staple, blades of grass, blades of corn, beards of oats, wheat, cotton bolls, etc., and they are the source of a great many eye injuries.

Knife wounds produce, as a usual thing, serious injuries to the eye and every housewife should, at all times, keep out of reach sharp knives, scissors, ice picks and all other sharp pointed instruments so that the children cannot find them to play with.

Quite common are injuries produced by a kick from a horse or a mule or the switching of a cow's tail while milking as well as blows from a fist or baseball or by being struck by the branch of a tree while going through the woods.

These are just a few of the many accidents with which we meet and while I have not tried to classify these injuries under their rightful heading, the point I am trying to leave with you is that it does not make any difference who the individual or what his business may be he is liable to an eye injury and that every safeguard and protection should at all times be thrown around us all to the end that we may conserve the most precious organs we possess.

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## CHRONIC APPENDICITIS —CASE REPORT

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This case is of interest only because of developments subsequent to operation, which will appear in the report.

Miss X, age 25, came to the clinic for examination August 16, 1924, complaining of a pain in the right lower abdominal quadrant which she has had on and off for the last two or three years. This pain has never been very severe. The last attack from which she is now recovering, has been the most severe, but even this has not been severe enough to put her to bed.

In the beginning of an attack the pain is diffuse but always tends to localize in the R. L. Q., is not associated with nausea or fever (patient's statements) but there is tenderness to pressure which remains only a short time following attacks. There is

no radiation renal or bladderward nor urinary frequency. The radiation is at times to the inner aspect of the right thigh. Constipation moderate, no menstrual association.

*Family history* is negative.

*Personal history:* Normal babyhood and girlhood. Usual diseases of childhood with good recoveries. Frequent attacks of tonsillitis with rheumatic manifestations. Tonsils removed three years ago by Dr. Dixon, since when she has been free of rheumatism. Best weight 118, present weight 110. Menses began at 12, regular, painful only during first few years, moderate in amount, duration four days. At the age of 18 had hyperplasia of the thyroid which lasted only a year.

*Physical examination:* Moderately well nourished blonde young woman, temperature 99, pulse 80, regular or normal tension. Head, neck and extremities negative except for what appears to be a slight enlargement of the right lobe of the thyroid. Mouth, teeth, gums and throat negative, tonsillar fossae empty. Chest—heart and lungs negative. Abdomen is moderately full, fairly soft, no masses. There is a moderate degree of tenderness in the R. L. Q., especially two inches internal to iliac crest on McBurney's line, muscular rigidity is appreciable over this area. Pelvic examination not made.

*Laboratory work:* W.B.C. 11300, poly 78, S.L. 14, L.L. 8. Urinalysis, specific gravity 1018, reaction alkaline, albumen negative, sugar negative, microscopical—*occasional pus cell*.

*Diagnosis:* Appendicitis, chr. cat. rec.

*Operation:* Appendectomy, med. lower incision. Oophorectomy left.

*Remarks:* The left ovary is about twice normal size and is short though with cystic degeneration. The right being perfectly normal, the left was removed. The appendix contained a thickened area on its surface covered by enlarged tortuous vessels. Its walls were thickened and it was distinctly diseased. General abdominal exploration negative. Patient discharged to her home in two weeks after an apparently normal convalescence.

Almost a year later, in response to a questionnaire, she returned for examination giving the following history: Has not regained her strength since the operation. Tried to teach but was compelled to quit

in two months on account of weakness. Has not regained her weight. Does not think that she has had fever. Not constipated; a little annoyance from nocturia, no cough. Principal complaint at this time is that for the past week she has had urinary tenesmus with some blood at the close of the act.

*Examination* at this time notes that she is rather thinner than at time of previous examination. Her temperature is 99, pulse 85. Chest shows slight dullness at left apex and a few crackling rales are heard here and in the left base crepitation is in evidence. X-ray of chest shows hilus infiltration with marked beading. Calcified areas in radiating lines extended upward toward left apex and to level of clavicle.

*Cystoscopy* shows a very reddened trigone especially about the right ureteral opening. Left trigonal area negative.

Two weeks later an anal fistula appeared which presented all the characteristics of a tuberculous fistula.

At this time with our studies of the renal tract incompleted, the patient passed out of our hands.

*General remarks:* When this patient was first in our care for the chronic appendicitis which operation proved she had, a more exhaustive study of the case should have been made either before or after the operation. There were two facts standing out, the one clinical, the other laboratory, which indicated that this should have been done. The first, the clinical fact of a progressive loss of strength attended by a weight loss with temperature of 99 of which the patient was completely unaware. Mistakenly we attributed the temperature elevation to the appendicitis but which a more careful analysis would have shown to be improbable since the attack had subsided and had never been other than catarrhal. The laboratory showed *occasional pus cells in the urine*. The urinalysis 11 months later showed 10 to 12 pus cells with many red blood cells marking the progress of this lesion in that length of time. This clearly indicated that two lines of research should have at that time been followed up: the *lungs* and *kidneys*.

At this time, Dr. Rucks made a clear cut diagnosis of pulmonary tuberculosis and while we were not permitted to pursue our studies to a proof it seems clinically fairly clear that she has also a right renal tuberculosis since she is complaining of consid-

erable right renal pain and soreness in addition to the cystoscopic evidence.

Careful study in the beginning would have been rewarded with a complete diagnosis and a gain of a years time to the patient.

The case demonstrates what all of us are prone to overlook—multiple lesions. Because we make a clear cut diagnosis on one lesion, we are very apt to push our studies of a chronic case no further.

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### STENOSIS-PYLORIC-HYPERTROPHIC CONGENITAL—CASE REPORT

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A. L. BLESCH, M.D.  
OKLAHOMA CITY

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Patient, baby boy, age 2 months. Parentage healthy, delivery normal, apparently healthy boy baby at birth. Health continued apparently normal during first three weeks of life; no diseases.

*Present illness* began with attacks of vomiting following ingestion of food, 30 minutes to two hours. This continued for five weeks, when the patient was brought to the clinic by Dr. Coley with the diagnosis of congenital pyloric stenosis already made. Diagnosis had been confirmed by X-rays which showed at the time taken practically complete stenosis with retention.

The vomiting had progressively increased from its inception to the present time. At this time it seems complete, the act is accomplished without effort, seems almost expulsive and sometimes contains more in quantity than one feeding. Wasting has been rapid in the past two weeks, dehydration marked, skin dry, a general mummified appearance. Patient restless and hungry. Food never refused but taken always eagerly.

Little patient seen by Drs. Robinson, Harris and the writer and a diagnosis confirmed and in agreement with Dr. Coley, an operation advised after 24 hours preparation. It was perfectly clear to all of us that operation in the dehydrated, starved condition of the little patient would be fatal.

Pre-operative preparation consisted in intra-peritoneal injection of four ounces of normal salt solution every four hours and a blood transfusion of 50 c.c. of mother's blood four hours before operation.

This treatment changed a fretful, crying, dehydrated little patient into a much improved and sleeping babe.

Operation 10-21-27 Ramsteadt pylorotomy. Anesthesia, local, novocain 1 per cent.

*Operative remarks:* Pylorus presented a hard cylindrical formation covered by normal, somewhat adherent peritoneum. This formation was about 1 1-4 inches in length, even in contour passing almost abruptly to normal structure at either end. It was incised longitudinally to the pylorus and transversely to the hypertrophied circular, muscular pyloric fibers. The division was made throughout the extent of the mass of hypertrophied fibers to the mucosa. No attempt was made to close over the pyloric operative area, but pylorus was dropped back and abdomen closed. Stomach was dilated but otherwise normal. Gas passed pylorus immediately upon incision. Patient slept quietly during the operative seance. The hypertrophied circular fibers appeared on section almost like cartilage and cut like it, spread immediately following the knife.

*Clinical post operative course:* The patient came from operation without any shock. Administration of water and food was begun at once. A very little vomiting occurred following administration of water, but once post-operative.

In a few days the baby was returned to the mother's breast and began to gain strength and weight rapidly.

Upon discharge from the hospital at the end of 5 days, the incision was healed, food was being taken at regular intervals and sleep was normal.

*General Remarks:* Congenital pyloric stenosis has been classified as: 1, spasmodic; 2, hypertrophic; 3, combined. It is rarely if ever seen after six months of age. Males are said to be affected in the ratio of 4-1, some even doubt its occurrence at all in females. Hyperacidity is a common concomitant to the extent that some believe it to be a hypertrophic muscle response to irritation. This view would place all cases in the beginning in the spasmodic class. But this view is negated by the fact that the condition has been found in a 7-months fetus. Also the fact that it is not encountered after six months of age speaks against this view of causation.

The pylorus begins to form at the third month of fetal life and perhaps the most rational view to take of the etiology is that it is one of the numerous developmental variations so often encountered. The fact that it becomes obvious after birth is to be explained by the fact that stomach function begins then and excites recurring spasm in the over developed circular fibers. This in turn exciting further hypertrophy—a vicious circle which finally completely closes the pyloric canal.

*Symptoms:* The outstanding symptom is of course vomiting which at first only may be mistaken for cyclic, for the reason that it appears in attacks which are responsive to pyloro-spasm. But it rapidly becomes continuous upon food ingestion until at last everything ingested is expelled and emaciation and dehydration, which at first is gradual, later becomes very rapid.

So long as a case can be considered spasmodic and the loss of weight is not marked, medical treatment is fully justifiable, but on the contrary when the symptoms of vomiting, weight loss and dehydration are progressive, surgery is indicated and should not be delayed too long. Most cases become really surgical.

The operation first applied to the relief of this condition was gastro-jejuno-stomy. This cured when it didn't kill, but it is a much more major procedure than that of pylorotomy as devised by Ramsteadt, which if done under local before the patient is utterly starved, is eminently successful and safe.

This case is reported mainly to call attention to a condition which we fear is often being over-looked at the cost of infant life. To a trained surgeon the operation is simplicity itself.

#### PROPHYLACTIC POLLEN EXTRACTS

The specific antigenic principle in plant pollens is best preserved by glycerin, or by a medium containing glycerin in appreciable quantity. For this reason pollen extracts for both diagnostic and prophylactic use are put up by some manufacturers in glycerinated form—the diagnostic extracts as a paste in small collapsible tubes, and the prophylactic extracts in liquid form, the diluent being glycerin and boric acid in one case, and 50 per cent glycerin in the other.

The diagnostic extracts are put up singly and in groups, enough in each tube for fifty tests.

The prophylactic extracts are available in dilute form, ready for use; there is no necessity for the

physician to make up his dilutions as required. By withdrawing 1-10 cc. from the vial containing 20 pollen units in each cubic centimeter, he has a dose of 2 units for beginning the prophylactic course. It is an easy matter then to increase the dose, passing in due time from the 20-unit concentration to the 200-unit and thence to the 2000-unit strength.

Some physicians advise a continuance of the treatment beyond the usual 15-dose schedule, claiming better and more lasting results; and it is also claimed that, in case of complete protection following, it may not be necessary to repeat the treatment the following season; or, if there is any question on this score, a skin test may show that further prophylactic treatment is not required. The immunity continues for varying periods, according to the antigenic response of the patient.

Parke, Davis & Co. have a new booklet on Pollen Extracts in Hay Fever.

#### BACTERIAL ALLERGY (HYPERERGY) TO NON-HEMOLYTIC STREPTOCOCCI

While it is true that scarum disease and rheumatic fever possesses in common the condition arthritis, this does not necessarily indicate that the two diseases have a similar pathogenesis. The points of dissimilarity between the arthritis of the two diseases are many, and are explained by Homer F. Swift, C. L. Derick and C. H. Hitchcock, New York (Journal A. M. A., March 24, 1928), on the basis of the differences between protein hypersensitiveness and bacterial allergy. There may be in patients with rheumatic fever two phases of hypersensitiveness to non-hemolytic streptococci; if so, the authors' observations indicate that during the active stages of the disease the allergy is predominantly of the second type. Whether or not these patients will pass into a condition later in which the skin allergic reactions can be prevented by specific neutralization of the toxic filtrate with an antitoxic serum in vitro is a question that can be answered only after continued observation.

#### OLECRANON BURSTITIS

In view of the fact that the olecranon process is so superficially located, that the cortex of the bone is extremely thin and also that the cells are of a cancellous nature, W. W. Lasher and L. M. Mathewson, New York (Journal A. M. A., March 31, 1928), believe that these bony cells are frequently injured at the same time that the injury to the bursa itself occurs. The close proximity of the large subcutaneous bursa to the elbow joint itself is to be remembered, as it is separated from the articulation only by the posterior portion of the orbicular ligament, and in one of the authors' cases was seen to communicate directly with the joint. An operation which does not completely remove the secreting lining of the bursa in a short time forms a sinus which drains clear synovial fluid. Unless the greatest care is exercised in subsequent dressings, this sinus will soon become infected. The occurrence of an osteomyelitis as an almost invariable complication does not seem to require any further explanation when one considers the close proximity of injured bone cells to the bursal infection. When a bursa is distended with pus, the most natural site of extension would be at its bony attachment. Patients seen early and operated on immediately make a rapid and complete recovery.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under direction of the Council

Vol. XXI

JULY, 1928

No. 7

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

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### EDITORIAL

#### THE MINNEAPOLIS MEETING

More than five thousand physicians attended the Minneapolis session. The visitors were most royally entertained by the citizens of Minneapolis, who are noted for their hospitality. Minneapolis aspires to become one of the nation's convention centers and its spirit of hospitality will go a long way towards making it such. While perhaps its hotel facilities should and will be rapidly improved any lack of these is

more than compensated for by the many great beauties and natural attractions which the city affords. It is the gateway to the natural play ground of many millions of people who take delight in visiting the state's wonderful lakes region.

One of the splendid features of the meeting, enjoyed by more than 40 visiting Oklahomans, was a dinner at the University Hospital, University of Minnesota, given by Mr. Paul Fesler, Superintendent of the Hospital, and Mrs. Fesler. The fish for this occasion were secured through the skill of Dr. F. M. Adams, Vinita, and Mr. Fesler, on a trip to one of the lakes.

The scientific exhibits, which have always, without question, been the greatest attractions of these meetings, this year excelled those of any previous meeting. A great deal of work with countless details was expended in making these exhibits of great interest to physicians studiously inclined. The pathological and anatomical specimens were wonderfully well prepared and arranged. The radiographic and anatomical preparation of some of the exhibits were masterpieces. Practically every detail affecting the physician and his work was covered or included in some manner in some one or more of the exhibits.

The election of officers provided two spirited contests. For president, Dr. Malcolm L. Harris, Chicago, received 80 votes, while Dr. William Corry Morgan, Washington, received 64. In the vote for meeting places all were eliminated at the start except Portland and Atlantic City. Portland received 96 votes and Atlantic City 44 votes. Dr. Wm. A. Jones, Minneapolis, was elected vice-president. The following officers were re-elected: Olin West, Chicago, secretary; Austin A. Haden, Chicago, treasurer; Fred C. Warnshuis, Grand Rapids, speaker; Allen H. Bunce, Atlanta, vice-speaker; Jerry H. Walsh, Chicago, and A. R. Mitchell, Lincoln, trustees.

#### NOTICE TO MEMBERS

Recently the Physicians' Mutual Life Association, Medical Arts Building, Oklahoma City, issued a folder carrying the names of several Oklahoma physicians and dentists as officers and directors.

Investigation at the Oklahoma City office indicated that no meeting of such officers and directors has ever been held. Dr.

J. S. Pine, Oklahoma City, requested the removal of his name as director, which request was complied with. Dr. Walter Hardy, Ardmore, and Dr. C. A. Thompson, Muskogee, were requested to act in an advisory capacity in the organization of a purely Physicians' Mutual Life Association, and believing that this would be of value to the medical profession agreed to assist in any way. The use of their names as directors was unauthorized and neither of them have any interest in the company. Dr. Geo. R. Osborn, Tulsa, is apparently in the same status. The Dr. "E. D. Baker," Guthrie, refers to Dr. E. O. Barker, Guthrie, who states that he did take a policy but is having it cancelled.

It is believed that in fairness to the Oklahoma profession they should be advised that at least in most instances the physicians listed as directors had no understanding that they were to act as such, have not acted in any such capacity and are mere figures, so far as the management of this insurance company is concerned.

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### *Editorial Notes—Personal and General*

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DR. HUGH SCOTT, Chicago, visited Tulsa and Muskogee in June.

HOBART HOSPITAL formally opened its new building with a reception Monday, June 25.

DR. PAT FITE, Muskogee, will spend a part of July and August at his summer home in Minnesota.

DR. F. W. HENDERSON, Tulsa, accompanied by his family, is visiting his old home and other Texas points.

DR. H. M. STRICKLEN, Tonkawa, is moving to Arkansas City, where he will continue the practice of his profession.

DR. J. L. ADAMS, for many years physician of Pryor, is president and general manager of the Hobart hospital, which opened June 25th.

MUSKOGEE opened its new city hospital late in June, the public being invited to inspect it June 29th and 30. Several thousand visited the institution during that time.

DR. C. P. MURPHY, who has been a member of the medical staff of the United States Veteran's Hospital No. 90, Muskogee, since July, 1923, has been transferred to Edward Hines, Jr., Hospital at Maywood, Ill.

DR. C. P. BONDURANT and MISS VERA CROPPER, Oklahoma City, were married June 23rd, leaving immediately for a ten days' trip after which they will be at home at 601 West Thirty-second street.

SOUTHEASTERN MEDICAL ASSOCIATION elected the following at their election of officers June 20th: Drs. T. H. McCarley McAlester, president; Roy Cochran, Caddo, vice-president, and J. D. Haynie, Durant, secretary-treasurer.

DR. FOWLER BORDER, Mangum, was recently adjudged victor and awarded damages of \$25,000 and costs in a case which has been pending in Oklahoma courts for many years. Dr. Border brought suit alleging conspiracy to injure him and discredit his work as Mayor of Mangum. The case has been tried many times. Dr. Border has always defeated his enemies in this fight.

STEPHENS COUNTY MEDICAL SOCIETY held a very interesting meeting in the dining room of the new Duncan Motel. Drs. Caraker and Nieweg were hosts. Steps were taken to prosecute druggists who are prescribing for venereals, also any one practicing the healing art without proper license. Free clinics advertised in the lay press also received a severe chastisement. Drs. McMahan and Pate will be hosts for the next meeting. The following members were present: Drs. Patterson, Caraker, Richards, Chumley, Bartley, McMahan, Long, Ivy, Salmon, Weedn, G. O. Hall, Smith, Overton, Carmichael, Burnett, Williamson, Talley and Nieweg. Dr. W. R. Mote was a visitor.

SOUTHEASTERN OKLAHOMA MEDICAL ASSOCIATION, Dr. C. C. Gardner, Atoka, president, and Dr. John A. Haynie, Durant, secretary-treasurer, met at McAlester, June 20. Beginning at 9:30 A. M. at Albert Pike Hospital, the program was as follows: Clinics at Albert Pike Hospital; luncheon at Albert Pike Hospital; adjourned to Camp Craig at Lake McAlester; call to order by President; invocation, Rev. S. H. Williams, McAlester; welcome address, Dr. Charles L. Pearce, president of Pittsburg County Medical Society, McAlester; response to address of welcome, Dr. Jas. L. Shuler, Secretary of Bryan County Medical Society, Durant. Papers read and demonstrations given were as follows: "Some Common Diseases of the Skin With Treatment," Dr. C. P. Bondurant, Oklahoma City; "Intravenous Treatment of Diseases" (with some illustrative cases), Dr. R. C. Huckaby, Valliant; "Fractures" (with lantern slides), Dr. Wade H. Sisler, Tulsa; "Perforated Gastric and Duodenal Ulcers," Dr. L. S. Willour, McAlester; A lantern slide demonstration of interesting gastro-intestinal conditions, Dr. Shade Neely, Muskogee; "Diagnosis and Treatment of Seasonal Hay Fever," Dr. Ray M. Balyeat, Oklahoma City; "Diagnosis of Pulmonary Tuberculosis," Dr. J. T. Wharton, Durant; subject unannounced, Dr. L. C. Kuyrkendall, McAlester. Annual election of officers, and dinner at Camp Craig.

### DOCTOR M. CLAY WYATT

Dr. M. Clay Wyatt, 60 years old, at one time a leading physician in Bartlesville, died June 29th after an illness of several days. Dr. Wyatt moved to Bartlesville a number of years ago and engaged in the practice of medicine there and at Dewey.

Dr. Wyatt was born in Maryland.

He was formerly a member of the Washington County and Oklahoma State Medical Association. He was a member of the Modern Woodmen lodge.

Dr. Wyatt is survived by a daughter, Mrs. Ethel Wyatt Segrave of St. Louis, Mo., and one brother, Mr. M. G. Wyatt of Dewey. Funeral services were held July 2nd at the Burt Funeral Home, with Dr. Harry L. Ice of the First Christian church officiating.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
117 North Robinson St., Oklahoma City

**The Repairs of Injuries to the Posterior Crucial Ligament of the Knee Joint.** William E. Gallie and A. B. LeMesurier. *Ann. Surg.*, lxxxv, 592, April, 1927.

The rupture or stretching of the posterior crucial ligaments is a very disabling condition, and the patient must either wear a heavy apparatus or suffer from an unstable and often painful knee. The operation consists of a long median posterior incision and isolation of the semi-tendinosus and utilizing its distal portion. The posterior capsule of the knee joint is exposed. A quarter-inch hole is drilled through the head of the tibia coming out near insertion of the semi-tendinosus. An anterior mid-line incision is made to enter the knee joint by the split patella route. The semi-tendinous tendon is isolated and passed through the head of the tibia from before backward. The interior of the point is exposed, the new ligament is pushed through the posterior capsule in line of the posterior crucial. A hole is now drilled through the internal condyle and the new ligament fastened so that it is entirely subsynovial. Knee is kept in extension in plaster two months. A case is reported one year after operation with excellent function. This is another brilliant contribution by these two Toronto surgeons.

**Treatment of Ankle Sprins.** Chas. P. Hutchins. *Boston Med. and Surg. J.* xcivii, 91, July 21, 1927.

In this article on ankle sprins, Hutchins first inventories the pathological possibilities, that is, the extent to which ligaments and tendons may be involved without fracture or dislocation of bone.

Sprin of the ankle is most often caused by unguarded movement, by which the foot is turned suddenly inward (rarely outward), with sufficient force to rupture the ligaments, and possibly some

of the fibres of the muscles, and to strain the tendons and sheaths.

An anatomical consideration is presented by the author to demonstrate that eversion sprins are much less common, due to the arrangement of structures about the ankle joint. He states, too, that when the foot is at a right angle to the lower leg, or when dorsally flexed to a lesser angle than that, sprins at the ankle joint are rare,

Treatment consists of strapping, the following technique being that employed by Hutchins.

The patient is seated upon a table at such a level that his depending foot hangs six or eight inches lower than the knee of the operator, who sits facing him. With adhesive straps one and one-half inches wide cut to length, the patient's foot is placed upon the operator's knee so that the ankle is dorsally flexed to eighty or eighty-five degrees from the long axis of the tibia and rests the full weight of the extremity upon the head of the fifth metatarsal. The patient's leg must be wholly passive. This leaves the leg on straight alignment from hip to ankle joint, and throws the foot into slight eversion. The first strap runs spirally around the lower calf on the medial side, across the instep and cuboid, under the sole, falling into a natural sweep on the dorsum. This is the salient control of the hypermobility. The second strap is a counterpart in the opposite direction, acting to limit eversion, and balancing the first. The third support is a stirrup from the middle of the calf, and passes in the lateral plans of the ankle joint. The fourth and narrow strip retains the third support in contact with the leg at its isthmus above the malleoli. It is imperative that the patient's leg be maintained in the same posture throughout the dressing, and his muscle action inhibited.

When the joint is firmly held in support, the patient is encouraged to walk; for functional use, if it does not cause further injury, is the best stimulant to repair. When the angle between the foot and the lower leg exceeds ninety degrees, the plaster is changed. Diathermy is used in conjunction with the strapping.

**Cyst of the External Semilunar Cartilage of the Knee.** J. A. Nutter and C. L. Blew. *Canadian Med. Assn. J.*, xvii, 55, May, 1927.

A case is reported. A boy sixteen had been disabled for a few days by a kick on this knee one year before. Four weeks before examination he began to complain of tenderness at the outer side of the joint line, in front of the external lateral ligament. There was some pain on full flexion and extension. At operation the cartilage was removed. The tumor was embedded in it. It measured four by three centimeters, was polycystic in character, and contained a pinkish gelatinous material. Microscopically there were numerous small cysts. The walls were composed of fibrous tissue, and there was no mesothelium lining. When the patient reported ten months after operation, he had made a complete recovery.

The authors review the clinical feature of the twenty odd cases in the literature. Their case is a typical one. They state that meniscotomy is necessary to effect a cure.

**UROLOGY and SYPHILOLOGY**

Edited by Rex Bolend, B.S., M.D.  
1010 Medical Arts Building, Oklahoma City.

**CLIPPINGS FROM UROLOGIC AND CUTANEOUS REVIEW**

Don't bury your mistakes; correct them.

In a fever of undiagnosed origin look for syphilis.

The life of the syphilitic should be very regular.

Not all cases of syphilis are cured, but many can be.

A lumbar puncture will clear up many a doubtful case.

Syphilis is a pandemic disease and no respecter of persons.

All doubtful genital lesions should be properly followed up.

Falling of the hair of the eye-brows is most suspicious of syphilis.

Headache is an important symptom of early meningeal syphilis.

Some cases of syphilis can only be diagnosed by the therapeutic test.

Never treat a genital lesion until a dark field examination has been made.

The cure of syphilis is at best presumptive and recurrences always possible.

If the skin itches following arsphenamine look out for dermatitis exfoliativa.

Stokes has said "To treat early syphilis with mercury by mouth is criminal."

Not all early neuro-syphilis will give a positive Wassermann in the spinal fluid.

The absence of itching must not rule out syphilis in the diagnosis of a skin lesion.

Local treatment is rarely necessary in genital lesions positively diagnosed as leucic.

The importance of the hygienic treatment of syphilis is hardly to be over-estimated.

An ounce of prophylactic calomel ointment is worth a pound of blue ointment cure.

That syphilis should be more common in men than in women is almost self evident.

Many a paretic has gone to an untimely end because some physician cauterized a chancre.

The diagnosis of latent syphilis may be most difficult, but should be kept constantly in mind.

To give arsphenamine without examining the urine is like lighting a match over a gasoline tank.

Do not consider the Wassermann the SINE QUA NON of diagnosis. It is but one symptom of syphilis.

A sharp needle will solve many problems of intravenous therapy, and make friends of your patients.

Spirochetes are not always found the first time in true chancres. Use your dark-field again and again and then again.

A diagnosis of chancre of the mouth by dark-field is extremely difficult. The spirochaeta microdentium morphologically is almost identical to the spirochaeta pallidum.

Neoarsphenamine should not be dissolved in a beaker that has contained a solution of cocaine or adrenalin even though the breaker has been well rinsed and sterilized as the slightest trace of those drugs may cause a slight decomposition of the arsphenamine, with resulting reaction.

**PREPARATION OF PROSTATICS FOR OPERATION**

Franklin R. Wright, in *Minnesota Medicine*, for February, 1928, says that the uremic man is prepared for operation by the judicious use of the catheter.

The elements which bring success are time and caution. The bladder should be only partially emptied daily, enough urine withdrawn to relieve but not remove the back pressure in the pelvis of the kidney. The amount of urine withdrawn is gradually increased until the bladder can be completely emptied. This allows the compressed kidney tissue to expand slowly. The urinary tubules not only retain but increase their function.

Under this treatment the uremia slowly disappears. The amount of urine excreted is reduced and its specific gravity increases. How near the urine will return to normal amount and specific gravity depends on the amount of permanent damage the kidney tissue has sustained.

The length of time required to decompress the kidney depends on the physical condition of the patient and the judgment of the surgeon. After it has been proven that it is safe to empty the bladder daily, the patient should be catheterized twice a day. Later, depending on the judgment of surgeon, a permanent catheter should be inserted.

As far as the danger of uremia is concerned any patient whose bladder has been drained by a permanent catheter for ten days without increasing his uremic symptoms can be safely operated.

In our opinion it is wise to let the uremic patient make a long preoperative convalescence. It is better to use the catheter a month too long than to operate five minutes too early.

### TUMORS OF THE BRAIN AND SYPHILIS

Molrsch (The Am. Jour. Med. Sc. 175: 12-18, January, 1928), in a study of tumors of the brain and syphilis reaches the following conclusions:

1. Tumor of the brain is sometimes incorrectly diagnosed as syphilis because of: (a) positive Wassermann reaction of the blood; (b) positive Wassermann reaction on the blood and spinal fluid; (c) positive Wassermann reaction on the blood and an unusual condition of the spinal fluid; (d) negative Wassermann reaction on the blood but positive reaction on the spinal fluid; (e) negative Wassermann reaction on the blood but an unusual condition of the spinal fluid.

2. The diagnosis of brain tumor is frequently made because of the choked disc in spite of serologic changes

3. The incidence of choked discs in cases of syphilis is frequent enough so that its presence in cases of suspected brain tumor should not be accepted as a positive differential point.

### ACUTE PRECOCIOUS SYPHILITIC MYELITIS

G. Nardi, in Arch. Ital. di Dermat., Sif. e Ven., Bol II, Fasc. IV, 1927, describes a case of acute syphilitic myelitis in a man 49 years of age. After describing the history, the grave clinical symptoms, and the laboratory findings he considered that the case was of unusual gravity and precocity. An intense and complete treatment was instituted but the patient died on the ninth day. The author enters into a discussion of the differential diagnosis of acute precocious syphilitic myelitis and concludes that it is a definite, special form of disease of the cerebro-spinal axis.

### AORTIC SIGNS OF CONGENITAL SYPHILIS

J. Martagao Gesterra in Arch. de med. des enfants, for November, 1927, says that in his nine cases, all in children, there was a marked clanging of the aortic second sound. Radioscopic examination demonstrated alterations in the aorta. In some of the patients a favorable modification of the acoustic phenomenon occurred during anti-syphilitic treatment, confirmed in two cases by a new orthodiagram showing considerable diminution in the size of the aorta. These lesions seem to be relatively frequent in children with congenital syphilis. However, they are of a transitory character, and are easily modified by anti-syphilitic treatment.

At the last meeting of the State Medical Association the powers that be voted to combine the Section of urology with medicine and surgery respectively. This meets with our hearty approval provided, of course, that the section chairmen give the specialties a fair place on the program.

It was my pleasure to review several papers before they were read before the section at the last meeting, the major portion of which were very excellent papers to be read before the general section, especially on medicine, but which were rather routine to the urologists and I imagine each section is having that same experience. It strikes us that it will be quite a job for the section chairman to keep a lot of bunk out of the program, but if this is done we feel that it is going to be of mutual benefit to all concerned.

With a sincere desire not to brag we do wish to state that in the section on urology there has been comparatively little or no long papers copied from some text book or journal with a great many statistics therein and I am not so sure that this condition exists in some of the other sections, having dropped into a section and hearing a discourse that would have equaled Osler at his best. It may be, of course, that urology, being a baby specialty, everything is new to us, or again, it might be that working in a limited field we do not have to have quite so much repetition. As stated, it is with a little fear and trembling that we enter this combination, but only because we dread stereotyped copy work. Otherwise we feel that we have something to give the section on medicine and surgery, that we can help them in their diagnosis in certain urological conditions and that in turn we can be considerably broadened and helped in numerous ways ourselves.

### TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
912 Medical Arts Bldg., Oklahoma City

Factors Fundamental to Healing in Tuberculosis.  
F. M. Pottinger, M.D., Amer. Rev. Tb., May, 1928.

Healing of Primary Tubercle. When bacilli gains access to the tissues for the first time, they are immediately opposed by the body cells. The fixed cells proliferate, forming the epithelioid cell and leucocytes gather in large numbers. Many of the bacilli are engulfed and destroyed, others extend to the neighboring lymph nodes.

A primary infection is essentially an acute disease. The healing of primary tubercle is usually accomplished through calcification. The probable reason why healing so often occurs is because the infection is produced by so few bacilli that the non-specific defensive forces of the body are able to overcome the bacilli or hold them at bay until the specific immunizing mechanism of the host has been brought into successful play.

Healing of Reinfections. Reinfections prolong life; first, by increasing the immunity which already has been established by previous infection; second, by stimulating the allergic response of the body cells and creating a barrier against the ready spread of the invaders; and, third, by producing reaction favorable to healing in and about previously existing foci.

Nature of Immunity and Cure. Whether or not a given patient shall overcome his particular infection depends upon the competence of his immunity reactions at the time when called upon. No matter whether the infection is limited or extensive, or slightly or markedly active, the indispensable factor to success in the natural healing of all chronic tuberculosis is the antituberculin reaction caused by reinoculation. Every reinoculation successfully withstood, leaves the individual with an increased immunity and the more serious and extensive the reinoculation withstood, the greater the immunity and the greater the healing resulting from it.

**Non-Tuberculous Intrathoracic Conditions.** (Radiography as an aid in their diagnosis). L. R. Saute, Amer. Rev. Tb., May, 1928.

Lobar pneumonia starts as a consolidation in the hilum region and spreads rapidly to the periphery, involving one or more distinct lobes of the lung. In upper lobe consolidation the ray traverses consolidation of similar thickness throughout so that the resulting shadow on the X-ray film should be dense and homogenous in appearance. The divergent beam of X-rays is projected across the lower border of the consolidation, so that the resulting shadow should have an abrupt straight line border from hilum to periphery. In middle lobe consolidation the consolidate area is smaller and wedge-shaped.

Lung abscess starts as an area of definite consolidation in the lung, frequently in the hilum region and soon develops an area of rarefaction in its midst. The consolidation spreads slowly and rarely, if ever, takes on true lobar characteristics. During the acute stage there is a heavy wall of infiltration thrown about the abscess cavity which usually serves to distinguish it from tuberculosis. When it becomes chronic the problem may be more difficult. Massive atelectatic collapse is encountered most frequently as a post-operative complication after abdominal operation. Radiographically an entire lobe of lung is densely solidified and homogeneous in appearance and there is narrowing of the involved side of the chest, approximation of interspaces and elevation of the diaphragm. The picture is similar to chronic interstitial pneumonia. Rolling the patient on the involved side and causing him to cough results in almost immediate reinflation of the lung. Primary tumors of the lung may be suspected as tuberculous disease. Tumors sweep across intervening pleural septa and present an infiltrating hazy border.

**Pleural effusion:** Fluid free from the pleural cavity, regardless of its cause, takes on a hazy concave upper border extending from the hilum upward and outward to the axilla. Localized pleural effusions produce a shadow with base at the periphery of the lung and bulge inward toward the compressible lung with a round semicircular border.

Pulmonary tuberculosis manifests itself in such numerous ways that, even with every method at our command, the problem of diagnosis is at times very difficult. The free use of X-ray examination proves a valuable aid in the diagnosis of the multifiform disease.

## BOOK REVIEWS

**"Gonococcal Urethritis in the Male,"**—for practitioners, by P. S. Pelouze, M.D., associate in urology and assistant genito-urinary surgeon at the University of Pennsylvania. Octavo volume of 357 pages, illustrated. Cloth, \$5.00. Philadelphia and London: W. B. Saunders Company, 1928.

The author states that this is a simple story told from his own personal experience and deductions therefrom. The work is practically illustrated from original drawings. Some very interesting case reports are presented at the close under the title of "Analysis of Case Histories."

**"The Duodenum, Medical, Radiologic and Surgical studies,"** by Pierre Duval, Jean Charles Roux and Surgical Clinic, Faculty of Medicine, Paris. Translated by E. P. Quain, M.D. Illustrated. Cloth, 212 pages. Price, \$5.00. C. V Mosby Company, St. Louis, 1928.

This book deals especially with those cases which present more or less symptomatology notwithstanding surgical operative interference upon the duodenum and its adjacent troublesome, neighbor, the gall bladder. It clearly shows why these symptoms persist after a perfectly proper duodenal operation or cholecystectomy. It is unique in that it is compiled by a physician, a surgeon, a radiologist, and it has required the assistance of the chemist; neither of the four greatly introducing their individual ideas, but rather all of them presenting a fused product as a joint study of data with mutual criticism. It goes without saying that this should be valuable to both surgeon and internist.

**The Surgical Clinics of North America** (issued serially, one number every other month). Volume 8, number 3. (Chicago Number, June, 1928), 219 pages with 49 illustrations. Per clinic year (February, 1928, to December, 1928). Paper, \$12.00; cloth, \$16.00. Philadelphia and London.

This issue contains many splendid contributions. Among those of special interest should be incision by Approach to Major Joints" by Phillip Kreuscher; "The Causes of Failure by Bladder Neck Operation" by Daniel Eisendrath; "Differential Diagnosis of Carcinomatosis" and "Tuberculosis Peritonitis by Means of the Cystoscope" by Oscar Nadeau; "Fatal Post Operative Alkolosis" by Edmund Andrews and Warner S. Bump; and "Gastro Enterostomy Disease" by Arthur Dean Bevan.

**A Manual of the Practice of Medicine,** by A. A. Stevens, M.D., professor of applied therapeutics in the University of Pennsylvania. Twelfth edition, revised, 12 mo. of 657 pages, illustrated. W. B. Saunders Company, Philadelphia and London, 1928. Cloth, \$3.50 net.

**"Clinical Medicine,"** by Oscar W. Bethea, M.D., Ph. G., professor of therapeutics, Tulane Graduate School of Medicine, profession of clinical therapeutics, Tulane School of Medicine, New Orleans, La. Octavo volume of 700 pages. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$7.50 net.

The author of this work has selected about 100 of the most common diseases coming within the province of internal medicine, omitting entirely unproven theories and directed his efforts to a concise presentation of symptoms, diagnosis and treatment. About 40 pages are devoted to tuberculosis; 9 to coriza. Tularemia is fully considered as are acute rheumatic fever and heart conditions. While the details of treatment are very specific, many prescriptions being included as applicable to certain cases, dietary considerations are not neglected. This is a very valuable book for busy practitioners.

## END-RESULTS OF RADIUM REMOVAL OF CARCINOMA OF BLADDER

To determine the value of radium removal of carcinoma of the bladder, B. S. Barringer, New York (*Journal A. M. A.*, Feb. 4, 1928), tabulates the end-results in cases in which five years had elapsed since irradiation. There were twenty cases of papillary carcinoma reported, twelve of which were proved by pathologic examination. Fifteen (75 per cent) were cancer free. Of these 20 patients, one has been lost sight of (included under deaths). Two were well from two to three years, and were then lost track of; two were well from three to four years; one was well from four to five years; five were well from five to six years; two were well from six to seven years; two were well ten years, and one was well 11 years. One patient died after operation from diabetic coma; two did at the end of two and three years, respectively, from carcinoma, and one died at the end of ten years, possibly from carcinoma. In fifty-one cases of infiltrating carcinoma, the pathologist's report agreed with the diagnosis in twenty-three cases. In sixteen cases, the diagnosis was carcinoma, without signs of infiltration, and in twelve cases either a pathologic examination was not made or the pathologic diagnosis was papilloma. Eighteen cases (35 per cent) were carcinoma free. In one of these cases a small papilloma occurred at the end of five years; this is under control. The deaths of patients who were free of carcinoma occurred as follows: two at the end of four years, one of apoplexy and one of cardionephritis; one at the end of five years of pneumonia, and two at the end of six years, one of kidney disease and one of apoplexy. There was one operative death from uremia. Thirty-two deaths occurred from carcinoma as follows: one patient was lost track of, and is included in the first year deaths; sixteen died in the first year of carcinoma, and sixteen died at various periods, up to five years from the onset of carcinoma. To determine the mortality of the suprapubic implantation of radium, Barringer tabulated the results of operations done up to 1927. In all, ninety-four suprapubic operations have been done in ninety cases. Two of these patients were operated on twice, and one patient, three times. The patient operated on three times is cancer free, and it is now seven years since the first operation; the other two are dead. These operations are divided as follows: papilloma, five operations; papillary carcinoma, ten operations; infiltrating carcinoma, seventy-nine operations. Three postoperative deaths occurred. One patient with a papilloma, who had bled for weeks prior to operation, died three days afterward from hemorrhage. Another with papillary carcinoma died in diabetic coma, three months after operation. This patient had had 5 per cent sugar in the urine before operation. The third death resulted from uremia, two weeks after operation, in a patient with infiltrating carcinoma. In this patient, the blood urea nitrogen was 42 mg. before operation; this rose to 120 mg. two days before death. In the ninety-four suprapubic implantations of radium, there was a mortality of slightly over 3 per cent. When this is compared with the mortality of between 10 and 20 per cent resulting from the operative removal of carcinoma of the bladder, it is realized that even if radium removal were not more effective than operative removal, one would, by using the former, spare a goodly number of lives. As opposed to this, the flexibility of radium

and its use in bladder tumors, the low mortality of its suprapubic application and the possibility of many small tumors being controlled intravesically so far overbalance the disadvantages that today radium is the method of election in controlling bladder tumors.

## ENTEROCOCCUS PERITONITIS

Leon DeVel and Elmer L. DeGowin, Ann Arbor, Mich. (*Journal A. M. A.*, Feb. 18, 1928), report the case of a boy, aged 6, who presented all the symptoms of peritonitis. The ascites increased rapidly. Abdominal paracentesis revealed a yellowish cloudy fluid, containing small flakes of fibrinous material, large numbers of polymorphonuclears, and numerous gram-positive diplostreptococci. These organisms were mistaken for pneumococci. The leukocyte count at the time was 41,000, with 90 per cent polymorphonuclears. The child was treated with pneumococcus antibody solution intravenously and intraperitoneally. Death occurred five days later. Altogether the abdomen was tapped four times in two days, and each time microscopic examination of the exudate revealed the same organism in large numbers. The organism was isolated in pure culture from the first specimen of exudate. In the peritoneal exudate, the organism appears as a comparatively large, gram-positive coccus. This coccus is lance-shaped like the pneumococcus and is arranged in pairs and in chains of from four to eight cocci. The chains do not resemble streptococci because they are composed of diplococci joined together rather than a series of round balls. These longer chains are not duplicated in artificial mediums, although shorter chains of two diplococci are often seen in broth. As a rule, the germ grows in broth as a lanceolate diplococcus looking much like the pneumococcus. The cocci from the agar plate are somewhat longer and narrower than in broth and have a decided tendency to arrange themselves in pairs with their long axes parallel. Pleomorphism has not been noted to any important degree in the cultures. The authors have never observed capsules either in pathologic fluids or in culture. The organism is not bile soluble, thus being definitely separated from the pneumococcus. The pathologist considered that the peritonitis in this case was secondary to an acute exacerbation of a chronic appendicitis. This would account for the presence of an organism which is normally an inhabitant of the intestinal tract. This case is important in that it emphasizes the need for accurate diagnosis. There can be no doubt that this condition could be diagnosed many times if laboratory workers were on the lookout for it. The common mistake is, no doubt, the one that occurred at first in the case reported, namely, the tendency to regard the germ as an atypical pneumococcus on account of its morphology. The possible presence of this germ should be considered in cases of so-called pneumococcus peritonitis and streptococcus peritonitis. As quick a differentiating point as any from the laboratory point of view is the heat resisting character of the enterococcus. After once having seen the growth on blood agar, one should not have any difficulty in differentiating it from a streptococcus.

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NOTE—Corrections and additions to the above list will be cheerfully accepted.

# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLAHOMA, AUGUST, 1928

NUMBER 8

## TOXEMIAS OF PREGNANCY\*

J. G. SMITH, M.D.  
BARTLESVILLE

Statistics tell us that twenty-seven per cent of the puerperal deaths in the United States is caused by the toxemias of pregnancy, therefore I feel justified in presenting this subject to you, feeling that it's study and suggestions are worth while.

Briefly reviewing current literature I note the following: Dr. Jeff Miller of New Orleans states that Eclampsia and the various other toxemias of pregnancy must still be characterized as diseases of theory for the reason that in spite of intensive work done along various lines, their origin is as yet entirely unknown.

According to Dr. E. Blanche Sterling, acting assistant surgeon of the United States Public Service, there has been a gradual rise of toxemias of pregnancy and maternal deaths reported for years 1915 to 1924. Later public health reports do not give any encouragement.

"A report of five years activities of the maternity service, second (Cornell) division, Bellvue Hospital, by Dr. Harold Bailey, published in the American Journal of Obstetrics and Gynecology, April, 1928, states that the largest number of deaths were from toxemias of pregnancy, including eclampsia. Out of forty-eight deaths, twelve were from the above cause.

"The toxicity of blood serum proteins in eclampsia, by Drs. Abraham F. Lash, and Wm. Welker of Chicago, and published in the American Journal of Obstetrics and Gynecology, April, 1928, gives the following conclusions: The blood serum proteins of normal and eclamptic women's blood showed no experimental evidence of toxicity in mice although injected in large doses intraperitoneally."

A paper on Toxemias of Pregnancy read by Dr. Talbot at Harrisburg, October 7,

1925, states that the toxemias of pregnancy were always associated with foci of chronic infection.

"The Present Status of Toxemias of Pregnancy," read by Dr. Polak at the Dallas meeting of the A. M. A., April, 1926, considers especially hyper-emesis; the pre-eclamptic toxemias and eclampsias, coinciding with Watson, Harding and Titus, grouping the underlying factors under three heads.

1. The metabolic factor with its carbohydrate deficiency during pregnancy.

2. The neurotic factor, in the woman with an unduly sensitive sympathetic nervous system, with heightened normal reflexes or hyper sensitivity, this condition tends to accentuate the metabolic fault.

Dr. Williams, in a paper read at Spokane, Washington, July 1, 1926 (on the toxemias of pregnancy and the treatment of eclampsia notes that "whatever the cause may be it is apparent that it will not be discovered theorizing, but solely by the patient and intelligent application of approved means of research by devoted investigators, furthermore it is clear that the treatment must remain empiric until the problem is solved." Report series No. 117, 1927, of the Medical Research Council of London, in a chemical and bio-chemical study of the toxemias of pregnancy, states:

1. There is a condition of intoxication associated with structural as well as functional changes in many, if not all, the organs and tissues of the body.

2. The condition is so definitely associated with pregnancy that it seems impossible to escape the conclusion that the cause is to be found in some substances elaborated in the fetal or placental tissues or in disturbances in maternal metabolism resulting from the pregnant state.

3. There is no clinical bacteriological or histological evidence to support the suggestion that the condition is due to the action of any animal or vegetable parasite.

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

4. There is no clinical or experimental evidence in support of the view that the condition is due to disturbance of endocrin glands, though structurally and functionally alterations are found in them during pregnancy.

Dr. Plass of Detroit, in a paper entitled "Non-protein, nitrogenous constituents of the blood in eclampsia and allied conditions," states that "Our investigations have led us to believe that blood chemical studies are at present of little or no practical assistance in the clinical management of these cases, and that the older methods—urinalysis, blood pressure and ophthalmoscopy—yield the most valuable information concerning the patient's condition. In a paper entitled "The Elimination of Eclampsia as a Complication of Pregnancy," by Dr. Brown Miller of Washington, D. C., published in the *Journal of Obstetrics and Gynecology*, January, 1925, terminates his conclusions as follows: That in cases of pre-eclamptic toxemia indicated by Albuminuria, high systolic blood pressure, slight oedema, headaches and digestive disturbances, it is our duty to endeavor by rest in bed, milk or a markedly restricted diet, colonic irrigation, purgation, etc., to control the toxemia; and in case of failure to do this to end the pregnancy.

I will not consider chronic nephritis or infections, as they are diseases complicating pregnancy and need not be considered any more than pneumonia, typhoid fever or other complicating disease.

I do not believe the Creator made a mistake when he created woman. Every provision was made for successful, and a happy reproduction, every organ was planned to expand, enlarge and reproduce perfectly a human being. Conception within itself, should not bring about a condition inviting disease, but on the contrary every organ of the body should respond to the extra work thrown upon it. The maternal organism must provide not only for the functioning of her own body, but the growth and development of the foetus as well as the elimination of extra waste material; the essentials are a perfectly balanced metabolism.

No two patients are the same, therefore patients must be individualized. We are taught that the object of digestion is to render food capable of absorption into the circulatory fluids, the blood and lymph. They are then carried to various organs and tissues to be used at once or stored for

future use. After being used, certain substances are produced as waste products, these pass back into the blood to be carried to the organs of excretion by which they are expelled from the body. The intake must be compatible with the ability of the excretory organs to eliminate the waste products. When the balance in metabolism is not kept, then we have an accumulation of waste products, developing an albuminuria or a pre-eclamptic condition. By proper treatment of the pre-eclamptic state, eclampsia may be eliminated.

The habits and environment of each patient must be considered and treated accordingly. No radical changes should be made in diet or mode of living. Treatment depends entirely upon the degree of toxemia or albuminuria. The appearance of albumen with or without a rise of blood pressure is the thermometer indicating plainly that the eliminative organs of the body are becoming over worked and unable to keep up with the amount of food absorbed. Methods other than diet and rest must be used.

The excretory organs must be assisted in eliminating the waste products already accumulated, then the intake of food sufficient to keep a metabolic balance. Any disturbance from the normal should be noted. Nausea, swollen ankles, dizziness, a systolic blood pressure of 140 or above, or traces of albumen; the presence of any of these are indications for careful observation and treatment. If these cases are seen early, I tell them to confine themselves to a milk and vegetable diet. Not over eating at any one meal, eat no meat or fried food, plenty of exercise, especially walking, also doing the housework, or other work to which they are accustomed. A saline laxative before breakfast every morning, and a mixture containing, sod-benzoate, pot. citrate and Tr. hyoscyamus four times a day and report in one week with a specimen of urine.

Mild cases respond promptly to this treatment, more serious cases receive the same medicinal treatment, only pushed until physiological effect is obtained. The reason for giving the above medicinal treatment is that our *materia medicas* tell us that benzoate of soda has a specific action on the liver as well as one of the most efficient drugs we have in eliminating waste products from the body. Pot-citrate is refrigerant, slightly diuretic and an oxydizing agent. Hyoscyamus is a vesical

sedative, non-irritant to the kidneys and ureters.

The value of any method of treatment is found in the end results obtained. I have studied the toxemias of pregnancy a number of years, solely from a clinical standpoint. I do a large obstetrical practice, treating patients of every degree and walk of life, and I get positive results following the treatment outlined in this paper.

I report one of my most persistent cases as follows: First called to see this patient about January 1, 1928.

Marie H., aged 21, seven months pregnant. Edema of entire body, epigastric pain, vomiting, dizziness, headache, systolic blood pressure 155, heavy albuminuria.

Treatment consisted of thorough elimination, rest in bed, restricted milk and vegetable diet, routine treatment with sodium benzoate as already suggested. She steadily improved and was delivered of a normal girl baby, March 4, 1928.

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*Discussion:* DR. W. A. DEAN, Tulsa.

After reading over Dr. Smith's paper which he so kindly mailed to me, I concluded that he had covered the subject so well that there was very little for me to discuss, other than my own treatment and that advocated by others.

In discussing Dr. Smith's paper I will devote most of my remarks to treatment, also touching on a certain classification and clinical findings.

First, to classify our toxemias beginning in first tri-master of pregnancy we have our nausea and vomiting, or morning sickness, which can then develop into hyperemesis gravidarum. In the last half of pregnancy I like a classification of Stander and Peckham of Baltimore, which is as follows: First, eclampsia; second, pre-eclampsia; third, chronic nephritis, com-

plicating pregnancy; fourth, eclampsia superimposed upon nephritis; fifth, low reserve kidney.

It does not necessarily mean that our cases of nausea and vomiting or even hyperemesis will later develop into any of the toxemias as above classified in the latter half of pregnancy.

Let us hope that our child-bearing women and future child-bearing women may become educated through various sources and channels, to put themselves under the care of physicians after missing the first period and that these physicians in turn will intelligently instruct these patients as to their habits and proper diet; also, when necessary, give proper treatment to overcome these early toxemias and prevent later toxemias.

Dr. C. Jeff Miller of New Orleans, writing in the Journal of Obstetrics and Gynecology, stresses the importance of a high carbohydrate diet in these toxemias. In my early cases of nausea and vomiting, a forced high carbohydrate intake at frequent intervals, has given me most pleasing results. However, to insure my patients a more speedy recovery, I like to give luminal sodium and corpus luteum. If they call me in the state of hyperemesis or bordering that degree of toxicity, then we can use the above treatment plus a 25 per cent glucose solution without insulin.

If a patient begins a rise of blood pressure, especially the diastolic over 80 mm. of hg., I do not hesitate having these patients come to my office every week for blood pressure, weight and urinalysis examination, questioning them for any headache, digestive disturbances, edema and spots before the eyes. It is quite essential for a frequent checking over these patients because great headway can be gained towards a toxic state when visits are not made more often than every three to four weeks.

Good elimination is urged at all times, frequent baths aid the skin, large quantities of water for kidneys and, if necessary, laxatives for the bowels. A pregnant woman's exercise is curtailed more than a non-pregnant, also, at times, a mechanical obstruction embarrasses the bowels.

For those patients who develop into the pre-eclamptic or eclamptic stage, Miller and Martinez of Pittsburgh, have shown the value of liver extract, while Lazard of Los Angeles, has shown the value of

MGSO<sub>4</sub> in therapeutic dosage, given intravenously. On the other hand Titus Dodds and Willetts of Pittsburgh, have proven that just before a convulsion the patient develops a hypo-glycemia and intravenous injection of glucose clears these patients remarkably.

In conclusion, let me again call your attention to the diastolic blood pressure in pregnancy. As long as your diastolic remains below 90 mm. of hg., you need have no fear of eclampsia.

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### RECURRENT ABORTION\*

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Consideration of the subject of spontaneous repeated abortions, because of its multifarious aspects, requires that careful limits be placed on the scope of our discussion. In this paper, we wish to bring to your attention two factors of etiology, one pathologic, the other, physiologic, and one suggestion for the treatment of the latter. The discussion will be confined to these phases. It is not intended that we lose sight of the more obvious factors: the toxemias, syphilis, the nephritides, anatomical abnormalities and extreme laceration of cervix uteri. These must be searched out carefully and treated adequately according to indications. In this paper our intention is rather to throw some light, if possible, on the causes for abortion in the more obscure cases, as in those cases where no obvious pathology explains the recurrence, and as a possible explanation of the spontaneous abortion which frequently follow repeated traumatic abortion, criminal or accidental.

The pathologic factor to which we call your attention is one too frequently disregarded—that of chronic infection. Endometritis, and metritis, as residuals of septic parturition, result in an irritable musculature, and a tendency to abortion. This is well understood. The role of focal infection is not as generally appreciated. Curtis<sup>1</sup> reports several cases of infection from teeth, tonsils, sinuses and one case where the husband's apical abscesses were the foci. He found that in every case the cultured urine showed hemolytic streptococcus, which disappeared on removal of the foci. The patient in each case, subsequently carried her pregnancy to a suc-

cessful conclusion. His results were carefully checked and corroborated by animal experimentation.

The second factor in our discussion requires that we enter as briefly as may be into the present conception of the physiology of menstruation, estrus, and parturition, as worked out by Allen and Doisy<sup>2</sup>, Novak<sup>3</sup>, Zondek and Ascheim<sup>4</sup>, Frank and his co-workers<sup>5</sup>, Dixon and Marshall<sup>6</sup>, and many other investigators. In 1922, Long and Evans<sup>7</sup> in a study of the estrous cycle of white rats discovered that the vaginal mucosa showed characteristic changes according to the period of the cycle. The following year, Allen and Doisy introduced this *vaginal smear*, in conjunction with the growth changes in the mammae, vaginae and uteri as absolute criteria for the study of the sex hormones, using immature and spayed white rats for this work. Later this investigation was expanded by determination of the sex hormone concentration of human blood, and the examination of human follicles, corpora lutea and placental tissue, obtained from living patients. Conclusions reached were as follows:

1. The normal sex cycle in primates begins ten to fifteen days after menstruation, with ovulation and ends after delivery and involution. Frank calls this the *fertile sex cycle*. The menstrual cycle is an abortive mechanism only. As Whitehouse<sup>8</sup> so graphically puts it, "Menstruation is the monthly abortion of an unfertilized ovum, and the menstrual discharge is the lochia of this abortion."

2. The hormones which control this fertile cycle are elaborated by the thecal cells, and are found in the follicular fluid, the corpus luteum, and in large quantities in the placenta—whether originated or merely stored there is not determined. They exert their effect consecutively and do not operate together. Prior to ovulation, the follicular fluid is contained in the graafian follicle, but on rupture the fluid is poured out and absorbed through the peritoneum, and the characteristic changes in preparation for gestation begin. Rapid vascularization of the remaining thecal cells results in a constant absorption of the hormone. The corpus luteum which forms in the old follicle carries on the preparation for the fertilized ovum. As the placenta is formed, this continues the hormonal flow into the blood. In the event that fertilization does not occur or the ovum fails to be implanted, the corpus luteum degenerates and deflorescence occurs as the menstrual flow. This

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\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

hormonic cycle is called the *gestational gland* by Frank.

3. The corpus luteum exerts a regulatory control, since during its presence and activity, the oxytocic effect of the pituitary secretion on uterine muscle is held in abeyance, but upon its beginning degeneration, the uterine contraction occurs. Dixon and Marshall show that only the pituitary has an effect on the uterine muscle, and that its rhythmic contractions occur only in the absence of active corpora lutea. This explains the periodicity of menstruation and parturition.

4. The gestational hormone does not have a species specificity, but is identical in lower mammals and primates alike. It is active only as a lipoidal extract, and its activity varies inversely in proportion to the amount of cholesterol present. The water soluble extracts are nearly inactive, as clinical experience teaches. The potency of the lipoidal extracts is measured in rat units, one unit being the minimum amount of the extract necessary to produce the characteristic changes in a spayed white rat.

In the study of spontaneous abortion in the light of these findings, we note that abortion occurs most frequently at the time of the regular menstrual cycle, when we would naturally expect the corpus luteum to show its degenerative changes, allowing the pituitary to stimulate the uterine muscle. If, in addition, there is an irritable muscle present, uterine contractions are much more liable to occur. Again, it is conceivable that in certain individuals the corpus luteum would show its degenerative change earlier than in others. This might be brought about by previous traumatic or toxemic abortion, with the formation of a tendency toward early degenerative change, or it might be merely an individual peculiarity. Conversely, in the presence of such conditions, it might reasonably be expected that the supplying of potent luteal extract would inhibit the pituitary action, and prevent the abortion. This view is supported by the findings of Pearl and Surface<sup>9</sup> and Kennedy<sup>10</sup> and others who show that injections of corpus luteum inhibit ovulation in fowls and rabbits, and that ovulation begins on cessation of the injections.

The conclusion must inevitably be drawn that the uterine contractions of parturition, whether premature or mature, as well as the rhythmic contractions at menstruation,

depend on a delicate balance between the hormones of the pituitary and of the corpus luteum and placenta. While the gestational hormone is preponderant, the pregnancy proceeds with no contractions. During the latter days or weeks of pregnancy, especially in multipara, uterine contractions are increasingly noticed. In many cases contractions are noted at each recurring menstrual cycle, and the patient must take great care lest abortion occur, while in some cases the abortion repeatedly occurs. In these cases, if our logic is sound, the corpus luteum is in varying stages of degeneration, and the hormone is insufficient fully to control the pituitary hormone, so the uterine irritability is increased. In those cases where there is an hyperirritability of the muscle due to chronic infection or other cause, the pituitary preponderance need be very slight to result in abortion.

In accord with the above conception, we have been using intra-muscular injections of corpus luteum a week prior to the regular menstrual cycle in those cases of irritable uterus, with recurring pains, or in threatened abortions, as well as in those patients with a history of one or more abortions. Even with the use of the relatively inactive and impotent commercial water soluble extracts, we have been able to show results which seem to confirm our position. Now that we have a lipoidal extract of high rat unit potency (lipo-lutin) our results in these cases should be even more striking.

Case reports could be multiplied illustrating this use of luteal extract, but many would, of course, suffer from the criticism that there was the possibility of a successful outcome without its use. In a series of about twenty cases with history of abortion or irritable, cramping uteri, in which luteal extract was used, every patient has carried through to term a living child. The most striking and illustrative case of the whole series was the first one in which the idea was developed.

Mrs. H. B., white, age 28, when first seen in 1923, had been married eight years. History of thirteen abortions without a living child. Abortions were always abrupt in type, occurring at various periods of the gestation, some followed by sepsis. No other history of illness. Denies artificial induction, and states that all cases were attended by competent physicians. Examination shows a well developed and nourished woman, of rather big boned,

coarse featured type — suggesting mild hypothyroidism. Blood pressure regularly below 100 systolic, and pulse about 60. Sacro-iliac joints much relaxed. States that as her pregnancies advanced she became almost unable to walk. Laboratory examinations of urine and blood negative on repeated tests. Tonsils out, teeth and throat in good condition. Pelvic examination essentially negative, except for relaxed condition of the ligaments. On thyroid medication and sacro-iliac support, her general condition improved markedly, but in December, 1923, at the sixth menstrual cycle, without warning she went into labor and delivered a child that survived three hours. This was her fourteenth abortion. For a year her condition was supervised, and in December, 1924, she was allowed to become pregnant, which she did promptly. Beginning in April, 1925, at about the fourth month, she was given an ampule of corpus luteum intra-muscularly every two or three weeks up to July 20, 1925, when she was given the last dose. This was just prior to her eighth menstrual cycle. She was advised to remain very quiet during the ninth menstrual cycle—about August 25—and no extract was used, as we did not know the duration of its effect. On August 25, with no warning during the day she entered vigorous labor at 7:30 P. M., was delivered of a living, six-pound girl an hour later. The child is still alive and well. There have been no further pregnancies.

This case is striking in that the patient miscarried reguarly under a like type of care and attention, until she was given regular additions of corpus luteum. She then continued in her gestation until the injections were stopped, and on the succeeding menstrual cycle, the ninth, she delivered a baby that had reached the age of viability.

The second case shows a slightly different angle.

Mrs. R. C. V., white, age 20, in 1927. Gave history of one pregnancy in 1926, which ended at the eighth month, the baby living only thirty-six hours. Care and puerperium normal as far as could be learned. Examination shows a short, squat, hypo-pituitary type of woman, about eight weeks pregnant. No evident pathology.

She comes asking relief from the cramping uterine pains, with slight spotting of blood. Given bed rest and one ampule of corpus luteum. Symptoms disappeared very promptly, but recurred at the third menstrual period, and were handled by corpus luteum alone. At the fourth, fifth and sixth menstrual periods she was given corpus luteum, although the cramping pains did not recur after the fourth month. She was delivered of a full term, living, seven and a half pound girl.

Here we see the control of the hyper-irritability of the uterine muscle by the presence of an excess of luteal extract, with the removing of pain, and the evidences of threatened abortion.

#### CONCLUSIONS:

1. Recurrent spontaneous abortions have entering into their etiology the factor of an early degeneration of the corpus luteum with a loss of the luteal hormone, and a loss of its control over the pituitary hormone, resulting in stimulation of the uterine musculature.

2. Chronic infection, either local as an endometritis or a metritis, or focal, as a hemolytic streptococcal infection in teeth, sinuses, kidneys, results in an hyper-irritability of the uterine muscle, which makes it more susceptible to slight amounts of pituitary excess.

3. Intra-muscular injection of potent corpus luteum, preferably a lipoidal extract, about one week prior to the regular menstrual cycle, increases the blood concentration of the hormone, and counteracts the pituitary hormone. This results in a relaxation of uterine contractions, removes the pain, and tends to prevent threatened abortion.

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## OBSTETRICAL ANESTHESIA AND ANALGESIA\*

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The desirability of pain relief during labor is no longer a matter of discussion. Severe pain is not essential to childbirth and the obstetrician should be able to give the maximum relief that is possible without jeopardizing the safety of either mother or infant. The lessening of the pain of parturition is of advantage not only to the patient, but also is a decided aid to the obstetrician in conducting to a safe and expeditious delivery.

Practically every method of anesthesia has been applied for the conduct of obstetrics, and after period of experimentation the use of any method has become evaluated and its limits recognized. Local anesthesia by infiltration of novocaine has been used for cesarean section and also for normal forceps deliveries. Its field is limited, however, and the difficulties of administration will restrict it to occasional usage, where inhalation anesthetic is contra indicated. G. Gelhorn in *Surgery Gynecology and Obstetrics* of July, 1927, reports the use of local infiltration of the perineal body and levator muscles, for normal deliveries, particularly of primiparous women. He uses preliminary narcosis for the first stage, combined with infiltration of perineum for the latter part of second stage and reports very good results from its use.

F. E. Keller, Philadelphia, reports nine cases in which he used local anesthesia for cesarean section. He advises its use in those instances in which organic disease contra indicates the use of general anesthesia. His patients presented either endocarditis, tuberculosis, nephritis, pyelitis, hyperthyroidism, or influenza. A preliminary medication of morphine 1-6 and scopolamine gr. 1-100 is given one hour before operation with 5 per cent novacaine used for infiltration.

The field of usefulness is limited, however, to those cases in which an inhalation anesthetic is contra indicated.

Spinal anesthesia also has some advocates. Cosgrove (*S. A. American Journal of Obstetrics and Gynecology*, December,

1927, page 751) holds it of particular value in eclamptic patients. Quoting from his report: "It decreases arterial tension, lowers intracranial and intraspinal pressure, has no effect on the liver and kidneys, and by lowering the blood pressure and slowing the heart rate relieves the overstrained myocardium. Spinal anesthesia lessens extent of convulsive involvement by blocking. It does not cause cyanosis and has no deleterious effect on the fetus."

He gives a very good report on the effect on blood pressures, and the details of administration and duration. (Fifty-four cases—normal forceps and cesarean deliveries). In order to obtain opinions of obstetricians in regard to spinal anesthesia he addressed over one hundred fifty obstetricians in regard to their experiences. He gives report of their opinions. He concludes in his summary that it offers the same advantages which it does in general surgery, namely: complete anesthesia, thorough muscular and visceral relaxation, in his opinion, in toxemia and eclampsia. (75 mg. average dosage—4th lumbar interspace for perineal and 3rd for laparotomy).

Astley in *American Journal of Obstetrics and Gynecology*, January 1927, reports twelve cases in which cesarean section was performed under spinal anesthesia. Some obstetricians, however, think this method is of danger to the mother.

The use of infiltration anesthesia regional block, caudal infiltration and spinal block will be limited to a maternity service comprising large number of cases, as the obstetrician who has reason to employ it only rarely will not become adept in its use.

The use of morphine scopolamine narcosis which had widespread use ten or 12 years ago has been largely abandoned on account of the high infant mortality. The employment of morphine either with or without scopolamine during the first stage combined with the use of gas oxygen during the second stage is the method applicable to the greatest number of patients.

The conduct of labor varies considerably more with primiparas than with multiparas. In general it is as follows: With a primiparous patient, if labor is definitely initiated, a hypodermic injection may be given of a small dose of morphine gr. 1-6 or 1-8 with or without the 1-200 gr. of scopolamine. This gives the patient considerable relief between contractions and enables her to enter the second stage with

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

much less fatigue, especially if the stage of dilatation has been prolonged. After three or four hours when the effect of this medication has worn off the progress of the patient should be determined. If the cervix is rigid and length not obliterated and dilatation beginning, the medication may be repeated, especially if a long labor is anticipated due to posterior position or early rupture of membranes. If at this time, the cervical effacement is complete with a soft cervix and dilatation of about three fingers breadth, the patient is moved to the delivery room. Usually administration of nitrous oxide oxygen can be begun during the last half hour of cervical dilatation. Many patients complain more bitterly of the last dilating pains than of the expulsive stage. An additional advantage of administration at this time is often noticed in that the patient welcomes the relief and the muscular relaxation aids the cervical dilatation. It is often noticed that a rigid cervix which has made little progression will relax and dilate quickly after the administration of gas is begun. Morphine should not be repeated near the close of the first stage on account of danger of apnea to the infant if delivery occurs within four hours of its administration.

Morphine administration near the close of the first stage requires considerable judgment on the part of the obstetrician. It is sometimes noted that an infant delivered one or two hours after morphine has been given the mother has spontaneous respiration; while other instances four or five hours after its administration the infant may be apneic. Whether the depressing action of morphine is greater four or five hours after administration or whether it is due to difference in placental circulation so that in some instances the infant receives greater amount of morphine is undetermined. As a general safe measure it should not be administered within four hours of anticipated delivery. During a second stage with gas anesthesia the voluntary expulsive efforts are usually increased and the duration of the second stage is shortened. The patient usually relaxes between contraction while during the contraction she responds to commands that she assist by "bearing down". This requires some judgment on the part of the anesthetist as the patient must receive enough relief that she will cooperate, but not enough to lose her ability to do so. An occasional patient may appreciate the analgesia so much that she refuses to cooperate

by voluntary efforts. These patients are rare, however, as with the great majority the relief of pain enables them to augment the expulsive effort. There is very rarely any prolongation of labor with nitrous oxide-oxygen analgesia. With the patient in analgesic state it should be remembered that the sense of hearing is very acute. The other senses being dulled, the patient remembers often only what she hears spoken. For this reason reasonable quiet should be maintained, with no comment to relatives or loud talking or criticism of patient or any unnecessary noise. The anesthetist's or obstetrician's directions to the patient, occasional encouragement is all that should be spoken. This, more important than is realized, for even though the patient may be apparently oblivious to sounds, she remembers what is said, and may even misconstrue the meaning and is apprehensive about her condition or feels that she is not cooperating as well as is expected.

The technique of administering gas oxygen analgesia is simple although the amount required and finer points of technique vary considerably for the individual patient. Enough gas oxygen should be administered with the onset of the pain to give the patient relief. The patient will usually notify the anesthetist at the beginning of the pain or if not the onset can be determined by the anesthetist by placing the hand on the fundus of the uterus. During the perineal stage the anesthetic has to be varied, according to the type of delivery. If it is spontaneous delivery it is administered continuously during delivery of the head. If low forceps or episiotomy is done either continuous gas oxygen or ether is added to the gas if necessary to produce light surgical anesthesia. Before ligation of the cord a few breaths of oxygen may be given to the mother with advantage to the baby.

The average duration of gas administration for primiparas is about two hours. There is no contra indication to longer administration. In one instance intermittent gas oxygen analgesia was administered by me eight hours. Davis reports that on several occasions he has administered it as long as fifteen hours. Either nitrous-oxide oxygen or ethylene with oxygen may be used. Ethylene being a more powerful agent is useful when the contractions are very vigorous. It is administered with higher percentage of oxygen, and is better for those patients who require so much gas

that they may become slightly cyanosed. For the average patient, nitrous oxide is preferable for analgesia, but may be replaced by ethylene when complete anesthesia is required. The comment of the patient can not be depended upon entirely in regard to the relief that she is experiencing. Often they complain at the close of each pain or may be conscious of considerable discomfort between pains. I heard a patient comment once that she was given gas between pains but no gas during pain. What happened, no doubt, was that she received so much relief during contraction that the interval of discomfort between was the only part that she recalled. Some patients remember nothing after the first few contractions after gas administration has begun. Some remember the onset of pain and that they were aiding by voluntary efforts, but had no pain sensation.

If the woman is a multiparous patient, there is rarely any need for preliminary medication during the first stage. The inhalation of gas oxygen should be begun if labor is progressing actively when cervical dilatation is from two and a half to three fingers. This depends somewhat on the activity of contractions, the second stage being shorter but usually more vigorous, the administration should be begun before the end of the first stage. It is of interest to note that a multiparous patient who was given gas with a previous delivery is most insistent on having it with subsequent deliveries.

#### OPERATIVE OBSTETRICS

Nitrous oxide oxygen is applicable for all operative deliveries with the exception of version. Complete relaxation being necessary, either ethylene or ether must be used. For high forceps ether must be used, while for low forceps usually gas oxygen is all that is necessary. The blades may be applied with the patient anesthetized, then she may be allowed to cooperate during the contraction as before. Cesarean section if indicated because of dystocia, gas oxygen followed by ether is preferable. If toxemia or eclampsia is present ethylene oxygen is probably less damaging to liver and kidneys.

During the last five years considerable interest has been manifested in the rectal ether analgesia which was brought before the medical public by Gwathmey. In general the administration is as follows: After labor is well established the primary injection of morphine either 1-6 or 1-4

with 2 cc. of 50 per cent solution of magnesium sulphate is given intramuscularly. Twenty minutes following this injection a second intramuscular injection of 2 cc. of 50 per cent magnesium sulphate alone is given. The ideal time for these injections with the primiparas is about two fingers dilatation. From two to three hours later depending on the patient's progress and distress the rectal administration of ether is given. This instillation consists of ether in olive oil with 20 gr. quinine and 40 minimis alcohol. With this method the patient usually is drowsy and sleeps between pains. It requires close attention to the progress of labor. If labor is very long the rectal instillation may be repeated using 10 gr. quinine instead of 20. Each instillation is accompanied with an intramuscular injection of 2 cc. of 50 per cent magnesium sulphate. (This technique reported by Harrar of New York in the American Journal of Obstetrics and Gynecology, April, 1927.)

The advantages of this method compared with administration of gas oxygen may be, first it is less expensive to the patient; second, it may be administered by the obstetrician without the services of a skilled anesthetist. However, this may be a hardship on the physician at times. The advantages are: first, if labor progresses more rapidly than anticipated the baby may be rather deeply anesthetized; second, colitis may occasionally follow the administration of ether oil by rectum. This method has been used very little by physicians here because of facilities of administering oxygen. In localities in which gas oxygen is not available it has been more widely used. Harrar reports that in 85 per cent of 5,800 cases pain is greatly relieved. In 4 per cent no relief, and in about 10 per cent only slight relief. Under his direction, no doubt, the most careful attention is given to details and especial effort is directed toward securing good results. In less skillful hands, the percentage of patients experiencing relief would be considerably less. He states that fetal asphyxia was not increased. It would seem that a careful tabulation of degrees of asphyxia should be made in order to determine whether there is definite increase or not. Year Book edited by Dr. Lee comments as follows: "This is Gwathmey's method and it is not without danger. The babies are sometimes asphyxiated and require expert treatment, which may not always be at hand, if this analgesia becomes generalized. The cervix as the result of overstim-

ulation of the uterine action by the quinine may tear deeply, which has bad immediate and remote sequellae: diarrhea from irritation of the colon may be bad; irritation of the lungs may also occur, and—ether is ether, and one must remember its effects on the kidneys and liver and blood. The editor uses Gwathmey's method in many, but selected cases, and uses only those of the drugs recommended as he considers indicated by the particular patient."

In regard to fetal asphyxia, the means of resuscitation should be considered. The consensus of opinion is against vigorous mechanical efforts. If slight or moderate cyanosis is present aspiration of mucus from the pharynx and larynx, placing the infant on the right side and observing it for a few minutes should be done; if the asphyxia is due to circulatory or respiratory sluggishness, the child will usually begin to breathe spontaneously in three or four minutes. If the infant has cerebral hemorrhage excessive or vigorous manipulations will do more harm than good; if the child is pale with slow heart administration of oxygen, with gentle rhythmic compression of the ribs will usually stimulate the respiratory movements. The oxygen maintains the cerebral centers and raises the blood pressure. Every hospital should have some means of administering oxygen. If gas has been given the mother, oxygen is always at hand, facilities are immediately available. A small percentage (5%) of carbon dioxide with the oxygen increases the stimulating effect.

An interesting article in *Journal A.M.A.*, April 21, 1928, in regard to asphyxia in which the author states the physicians and hospitals should be as well equipped to resuscitate patients from asphyxia as a fire department. The equipment is relatively inexpensive and it is really a discredit to the medical profession that the public feels that the city fire department is better equipped to handle those cases than hospitals. Pulmotors are considered practically useless.

#### SUMMARY

1. Local infiltration, regional block, and spinal anesthesia have a place in obstetrics, limited to those patients in whom inhalation anesthetic is contra indicated because of organic disease.

2. Twilight sleep has been abandoned because of high infant mortality.

3. Rectal ether, in combination with morphine and magesium sulphate, is being

used but its application requires expert supervision and judgment. Adequate comparison of fetal asphyxia had not been reported and this method may be considered at present to be in the experimental stage.

4. Gas oxygen alone or in long labors preceded by preliminary medication during the first stage is applicable to the largest number of normal and operative deliveries. The majority of patients experience complete relief from pain after administration is begun, while the remaining number receive amelioration of pains. Delivery is effected more expeditiously, with no deleterious effects on mother or child. Cooperation between obstetrician and anesthetist is of course essential.

#### SOME HEMORRHAGES OF PREGNANCY\*

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This is a large subject and I do not expect to do more than indicate an outline of treatment of certain types of these hemorrhages of pregnancy. I will not make any attempt at originality, but will simply emphasize certain view points, brought out in recent papers. The most dramatic, tragic, and to me, the most interesting of the accidents of pregnancy are included in this subject.

Rigby, in 1775, first clearly distinguished between placenta praevia, which he called unavoidable hemorrhage; and premature separation of the normal implanted placenta, or accidental hemorrhage of pregnancy, as he called it. Placenta praevia is the most common of these two conditions, occurring about once in 250 to 1000 pregnancies, according to different statistics. There were 303 placentae previae at the Boston Lying-in Hospital from 1895 to 1926. In the ten years from 1915 to 1925, there were 151 cases of placenta praevia, while in the last ten years there were 152 cases of separated placenta, however, many of the latter were separated, low attached, placentae and were really placentae praviae. Thus it is seen, that neither condition is so rare that it should not be expected and prepared for.

The differential diagnosis of these two conditions, is not difficult, except in the case of those separated, low attached,

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

placentae and in these the bleeding usually occurs late in labor, when the delivery is about complete and when a diagnosis is not so important. In the case of placenta praevia, the bleeding is painless, while the chief subjective symptom of abruptio placenta is severe pain. In the former, the uterus is soft and in the latter, board-like. In the former, the foetal heart is heard, ordinarily, the parts palpated; in the latter these both disappear.

A short discussion of causation and pathology of placenta praevia, will clarify later discussion of treatment. Predisposing causes are usually, multiparity, chronic endometritis, subinvolution, or twin pregnancy. The placenta develops in the zone of dilatation of the uterus, hence when the early painless uterine contractions begin, the sinuses are opened by the upward retractions of the fibers of the lower uterine segment and painless bleeding ensues. This zone becomes soft and spongy and is almost as easily torn as wet blotting paper. It loses its normal ability to contract. The more nearly over the os the placenta is implanted, the more the lower uterine segment is altered.

Let us keep particularly in mind the pathological picture of the cervix, the villi grown down into the fibromuscular tissues; not separated by a decidua; the tissues spongy and vascular. This may mean placenta accreta. It always demands utmost care in treatment of the cervix at delivery on account of postpartum hemorrhage from failure of contraction or from cervical tears, due to the extreme friability.

Absolute diagnosis of placenta praevia is made only by digital examination. The initial hemorrhage is usually small and except for examination, may be thought to be from a polyp or cervical erosion. At the slightest hemorrhage at the latter part of pregnancy, the patient should be sent into the hospital if possible, or to some place where she can be given gas oxygen anesthesia and a thorough examination made, with the finger in the cervix. Preparation should be made for immediate delivery. Often the examination results in hemorrhage which is much more severe than the initial one and preparation to cope with this should also be made. It was not uncommon a few years ago, to see a patient come into a hospital, moribund from a hemorrhage following an examination at home. Sheets and table linen were frequently found stuffed into the vagina and

the outlook for an afebrile convalescence was not good. The classification of placenta praevia, which I wish to use in the discussion, is central, in which the placenta covers the os, partial, and marginal; in which the placenta reaches just to the internal os.

In discussing the treatment of placenta praevia, I should like to follow the evolution of treatment as practiced at the Boston Lying In Hospital, from 1895 on, as reported in two papers by Kellog. From 1895 to 1915, maternal mortality of all cases was 20 per cent. In 1908, J. Whitridge Williams had advocated the conservative treatment of placenta praevia, that is, Braxton Hicks' version, or the use of the colpeurynter, or bag. Manual, or instrumental dilatation and extraction had previously been the established treatment. From 1915 to 1920, in which time the conservative treatment had been used at the Boston Lying In Hospital in 57 per cent of cases, the mortality fell to 5 per cent; 19 per cent in complete praviaes and 0 per cent in partial and marginal cases; the infant mortality, remaining about the same, that is, about 48 per cent. From 1910 to 1915 the mortality in complete praevia had been 36 per cent, that of incomplete praevia, 18 per cent. The mortality of those cases delivered by dilatation and extraction, was 80 per cent and 100 per cent respectively for the five-year periods. Part of this marked improvement in statistics was probably due to the fact that praevias were more promptly delivered before the patient had a chance to be bled out. Also, the cases were sent in more early to the hospital. In 1921, Kellog predicted that with increased use of conservative treatment, the mortality of 6 per cent would be bettered in the following five years. However, in 1926, he found that it had risen to 10 1-2 per cent for all cases of praevia and from 18 to 26 per cent in complete placenta praevia. The foetal mortality had risen from 48 to 54 per cent. Analysis of the deaths at this time revealed the cause of the majority to be postpartum hemorrhage and concealed rupture of the uterus at the placental site. Certain cases delivered from below were bound to rupture and bleed at the placental site, due to the presence of placenta accreta and to the failure to contract at the lower uterine segment.

In analysis of the 45 deaths from 303 cases (the total number of placentae praeviae since 1895), Kellog thought 15 to be ruptured uterus, and six undoubtedly were

ruptured uterus. Fifteen others were from hemorrhage and shock. In other words, a large majority died from hemorrhage and ruptured uterus, or both. The maternal mortality, with complete praevias, was 25 per cent with conservative treatment; far above the average mortality of cesarean section. Therefore, the conclusion was inevitable that complete placenta praevia should be delivered from above. At cesarean the bleeding can be seen and handled by suture or packing, or if necessary, a Porro hysterectomy can be done. In delivery from below, even with bag or version, the cervix may not be completely dilated, and the last bit of dilatation necessary may result in tears. This is avoided by delivery from above, and too, postpartum hemorrhage is much more rare after cesarean. To obtain good results, however, cesarean must be limited to patients in good condition, or who can be put in good condition by transfusion. The baby should be viable. There is one exception to this last statement, however. If a case has been examined under doubtful circumstances and perhaps packed, when infection is likely, hysterectomy is indicated. Dr. Irving recently published a series of 57 cases of placenta praevia delivered by him or under his direction with two maternal deaths; both of these were from sepsis; both cases had vaginal examinations done outside the hospital. He believes he could have saved both, by hysterectomies. A Porro seems thus to be indicated, whether the baby is viable, or not, in potentially infected cases. A great many other factors enter into this question of treatment of placenta praevia by cesarean; such as age of the patient and rigidity of the cervix. As to the type of cesarean done, that depends on the operator. The low cesarean gives better exposure of the bleeding area and suture and packing may be more easily done; but this is balanced by the fact that the incision is liable to be over the placental site and thus hemorrhage profuse.

As to the treatment of partial and marginal types the bag and Braxton Hicks' version have given good results. The simplest and therefore the best of these two methods for general use is the bag. The personal experience of the operator enters in here and the Braxton Hicks' version in the hands of experts, as for example, Dr. Irving, has given almost perfect results. It is a simple procedure to place a bag through the cervix. The best type is the largest size non-elastic, Voorhees bag. It is best placed intraovularly since then the

bag presses directly on the bleeding area. Also rupture of the membranes starts up labor the sooner. If weight is needed to stop the hemorrhage, only the smallest amount necessary should be attached, usually two pounds or less. Labor usually comes on rapidly and is not hurried until the bag is expelled, when immediate version and extraction is done to prevent bleeding behind the bag after delivery.

If bleeding persists, pack first, and if this fails, a Porro is in order. If a Braxton Hicks' version is done, only the slightest traction on the leg is allowable, for fear of damage to the cervix.

In a few cases of marginal placenta praevia, the use of pituitrin may have a place. The membranes are ruptured, the head allowed to descend and act as a tampon. After labor intervenes, extreme care must be taken to not give too much pituitrin. Many normal cervixes have been widely torn by pituitrin. Even in inducing labor, doses of one to two minims repeated if necessary, are sufficient.

To recapitulate in the treatment of placenta praevia, the patient should be brought to the hospital early before being bled out. Examination should be made under circumstances suitable for aseptic termination of labor. Hemorrhage is avoided by early treatment and slow delivery, respecting the cervix. Hemorrhage is treated by infusion, but particularly by transfusion. Every bleeding case should be grouped immediately at entrance to the hospital. Transfusion is the greatest adjunct in treatment in these cases.

One of the most striking clinical pictures in medicine, is that of premature separation of the placenta or utero-placental apoplexy. There is sudden onset of excruciating abdominal pain, during the later part of pregnancy, the patient cries out, she feels increased activity of the foetus for a few minutes, then she feels all motion cease. There may be a small amount of vaginal bleeding, or none. She enters the hospital in extreme shock, in a cold clammy perspiration, her lips blue, her skin pale, heart rapid and pulse feeble. At examination the abdomen is found to be tender, the uterus hard, never relaxing, the foetal heart not heard. At vaginal examination no placenta is felt through the cervix.

Muus of Copenhagen, in 1905, first wrote that accidental hemorrhages were a manifestation of the toxemias of pregnancy, and called attention to the frequent

association of eclampsia. Couvelaire, in 1911, first described the histological findings in the uterine wall. These consisted of subserous ecchymoses, and hemorrhagic infiltration of the myometrium. Essenmoeller in 1913, emphasized the important connection between the toxemias of pregnancy, eclampsia and premature separation of the placenta. He also mentioned the traumatic types.

That the traumatic cases are exceptional, was brought out by Willson, who found toxemia present in 87.7 per cent of his cases. An interesting case of traumatic origin, was recently reported by Greenhill. A para 9, had started in labor and was on the way to the hospital when her car collided with another. She fainted and went into shock. At entrance to the hospital, her blood pressure was 100, pulse 104. There was a serous discharge from the vagina. The abdomen was distended and tense. The foetal heart or parts, were not made out. At operation the uterus showed hemorrhage into the myometrium and into the left broad ligament. The placenta was free, the uterus full of blood. A hysterectomy was done on account of the flabby uterus. She recovered and was discharged in twenty-one days.

Out of Willson's 69 collected cases reported in 1922, the urine was reported in 57 and of these 87.7 per cent had albuminuria. The average systolic pressure was 182. There was edema in 12 cases, headaches in seven, eye disturbances in six and eclampsia in six. In other words, utero placental apoplexy is but rarely due to a mechanical cause. The whole picture is that of toxemia, either chronic or fulminating. In the few autopsies that have been done in these cases, the placenta appears practically normal. There is the characteristic hemorrhagic process in the uterus, broad ligaments and ovaries; there may be central necrosis of the lobules of the liver, hemorrhages in liver and kidneys, serous or bloody infusion in the peritoneum.

The incidence of premature separation of the placenta increases from the fifth month to term. In Willson's cases, maternal mortality was 55 per cent, foetal 92½ per cent. In those cases in which hysterectomy was done, the mortality was 47.6 per cent, those delivered by conservative cesarean, 19 per cent. All those delivered from below, died of postpartum hemorrhage. Therefore, the best hope of recovery seems to be from delivery by conservative cesarean.

Kellog, Eades and Weller, recently reported the cases from the Boston Lying In Hospital and further strengthened the relationship between premature separation of the placenta and the toxemias of pregnancy. There were 165 cases indexed as separated placentae in the last ten years. Sixty of these belong to the toxic chronic nephritic group, the others were low attached placentae, or else were traumatic in origin. Of the toxemic cases 29 cases were studied. Of these five had almost complete anuria, three of these died, two recovered. Five had eclampsia before the placental separation, twelve cases had a history of marked toxemia, eight cases were known toxemias, without convulsions, in which the placenta separated just as the signs and symptoms of toxemia had abated.

The case which recently aroused our interest in this condition was a primipara, aged 40, who had had a systolic blood pressure of 160, which fell after hospital treatment, but remained high. The placenta separated with characteristic symptoms at about the seventh month. A conservative cesarean section was done immediately after entry to the hospital; the patient being in good condition. At the time of operation there were found four cubic centimeters of urine in the bladder. The first 24 hours, post operative, there were four drops of urine secreted. The second 24, 45 cubic centimeters and the third 24, 135 cubic centimeters. Twenty-five percent glucose was given intravenously to start up the kidneys, and a total of over six liters of fluid given the first day, and over nine liters the second, by all channels. The blood chemistry figures arose for eight days, then slowly fell after the urinary secretion became well established. Here was a case which lost little blood at operation, but almost died subsequently from anuria. This patient was ultimately discharged, obstetrically well.

Kellog emphasizes the fact that fluids should be forced in these cases, by vein, skin, and mouth, with glucose infusions and transfusions in spite of massive edema and elevated blood pressure. The high blood pressure is a protective mechanism of which over reduction may result in anuria.

The ideal treatment in these cases, I believe, is illustrated in a case which came in to the Boston Lying In Hospital, shortly after the one just mentioned and whose course was much less stormy. She was a para twelve and had no toxemic symptoms

when seen in the prenatal clinic. Fulminating toxemic symptoms intravened when near term and the placenta separated at home. She was seen almost immediately by the intern who commandeered a taxicab and brought her to the hospital. She presented the typical signs, a liginous uterus and obliterated foetal parts. Shock was extreme. Immediately direct blood grouping was done, 500 cubic centimeters of citrated blood was transfused. At classical cesarean, the uterus was found full of blood, the foetus dead. The uterus acted well, and was not removed. After operation her condition was still shaky and another transfusion was done. Her postoperative course from this on, was uneventful, and she was discharged at about the usual time, for operative cases. Toxemic symptoms and edema rapidly disappeared.

On account of the fact that the uterus may not act well, cesarean section is imperative in these cases. Sometimes, however, even when there is considerable hemorrhage into the uterine musculature contraction is good and the uterus can be left in. Pituitrin and ergot injected directly into the uterus, aid this contraction. When the uterus does not react well and when hemorrhage into the musculature, ovaries and broad ligament is extensive, a Porro is necessary. The sooner treatment is instituted, the better; both because of hemorrhage and shock, and because of kidney damage. Early surgery does not guarantee freedom from suppression of urine however. If a patient was seen almost fully dilated with slight shock and bleeding, delivery from below would seem to be desirable, but in Willson's series there seems to be none of these cases since all those delivered from below, died.

A high foetal mortality is inevitable in premature separation of the placenta, but the maternal mortality of 55 per cent will undoubtedly be much better by early radical treatment. The problem in placenta praevia as well as premature separation, is to get the patient in shape for operative treatment; or to initiate treatment, while her condition is still good. One indispensable adjunct to the treatment, is transfusion. Transfusion has formerly been too frequently postponed until the patient is too far gone to receive its greatest benefits. A moribund patient is extremely difficult to transfuse, sometimes on account of the collapse of the veins, whereas, transfusion ordinarily, is a simple procedure. The time to transfuse is early and often,

until the patient is brought to a point where she can maintain her own blood pressure. Salt solution and glucose can do a great deal of good, but their effect is transitory. Glucose solution with or without insulin is particularly efficacious in shock. Transfusion is a preventative of further disaster in bleeding cases as well as an indispensable immediate life saving maneuver. Many of the cases of septicemia, postpartum retention of urine and cystitis occur in patients too anaemic to withstand infection. Transfusion is excellent treatment for sepsis, but it is better still as a prophylactic against sepsis.

As to the method of transfusion to be used, the most certain method is the best in these emergency cases. Direct transfusion gives excellent results and fewer reactions than the ordinary citrate methods. The Unger method of direct transfusion is a simple and sure method and is adaptable to emergency work.

Dr. Hartman of Detroit, has invented a method of citrate transfusion which is simple and which has given fewer reactions even than the Unger method. The blood and citrate solution are mixed in the needle and small clots are less apt to form in the tubing. The ordinary citrate method has given excellent results at the Boston Lying In Hospital. The method of choice therefore, seems to rest with the individual operator. All bleeding and toxemic cases should be immediately grouped at entrance to the hospital and a Donor obtained. Direct grouping is necessary and no more complicated than grouping with sera.

#### SUMMARY

(a) Marginal and some partial placentae are best treated by conservative methods, i.e., by Voorhees bag in most cases, or by Braxton Hicks' version. Central and some marginal praeviae in which the patients are in good shape, are best treated by cesarean section. Patients should be transfused until conditions warrant operation. In potentially infected cases hysterectomy is the treatment of choice. Stop bleeding, respect the cervix, and transfuse.

(b) Premature separation of the placenta is best treated by early cesarean, without hysterectomy, if possible. Porros should be done in potentially infected cases, transfusion is indicated in most cases. Accompanying anaemia should be particularly noted and treated by glucose intravenously and fluids forced by all channels.

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*Discussion*, DR. E. P. ALLEN, Oklahoma City.

Dr. Foster's paper shows he has spent considerable time and thought in its preparation. It also shows that he is keeping up with the recommendations of his profession. If more of us would dig into the literature; watch the journals, hospital reports, etc., I am sure that our mistakes and blunders would be minimized. Obstetrics, like all other branches of medicine and surgery, seem to change from the radical to the conservative and then back to the radical again, etc. I can only discuss some of the points brought out by Dr. Foster, most of which I agree with, yet, as he suggested, each case must be individualized and studied from its own particular phase. Ordinarily, I have always hesitated to do a cesarean section on a woman who had had babies normally, even though she might present symptoms of a placenta praevia or an abruptio placenta. I have had excellent success in the use of the large Voorhees bag that the doctor mentioned, together with very close observation, and by the use of version. Fortunately, my cases of placenta praevia have not been of a severe type. I can see very easily why, in a primipara, a cesarean section should be recommended, and in a case where one feels that a cesarean section will probably be indicated, I would hesitate to recommend a vaginal examination under anaesthesia for the purpose of a diagnosis. We know that from 70 to 90 per cent of all painless hemorrhages in the last trimester of pregnancy are due to placenta praevia, therefore, if the loss of blood is sufficient, I think one would be justified in advising an operation without any manipulation

from below. Sometimes the most gentle examination, even with the gloved finger, will start a hemorrhage that is hard to control, and for this reason, I believe one would be justified in making his diagnosis from the history, external examination, subjective and objective symptoms.

The differential diagnosis of placenta praevia and abruptio placenta was clearly brought out by the essayist—that is:

1. In placenta praevia there is no pain. In abruptio placenta there is usually acute, distressing pain at the placental site.
2. In placenta praevia there is no rigidity of muscle. In abruptio placenta the muscles rapidly become tense.
3. In placenta praevia the foetal parts can be felt and the foetal heart heard. In abruptio placenta the foetal parts cannot be felt and the foetus is usually dead.
4. In placenta praevia the shock is either absent or comes on slowly while in abruptio placenta the shock is sudden and often severe.
5. In placenta praevia there is no increase in the size of the uterus. In abruptio placenta one can distinguish a rather rapid increase in the size of the uterus by the use of a tape.
6. In placenta praevia there is always external bleeding; usually bright, red blood. In abruptio placenta there may or may not be external bleeding, and it is usually darker and often clotted.
7. In placenta praevia one can often locate the placenta in the lower segment of the uterus by the use of a stethoscope. In abruptio placenta this cannot be done.

I agree with Dr. Foster in his observations that in the majority of cases of abruptio placenta there is also toxemia, high blood pressure, albuminuria, etc., and if we consider the fact that women with any marked degree of toxemia are poor surgical risks, then here again we had better hesitate in doing so radical procedure as a cesarean section plus removal of the uterus (Poro). I have treated my cases, and especially multiparas, by the use of the bag or better still, a thorough packing of the cervix and lower segment of the uterus; a tight abdominal binder as recommended by DeLee in one of his older books and pituitrin.

Again the doctor mentions that the mortality in cesarean section is much lower than that of placenta praevia and draws the conclusion from this that cesarean section is indicated in most cases of placenta praevia. I wonder if the previous loss of blood plus the weakened condition of these does not increase his mortality very much more than in ordinary cases of cesarean section. If we are going to depend on transfusion and other intravenous medication then I think we should follow LeDee's suggestion and have two forces at work, one giving the transfusion while the other is doing the operative procedure.

### PREVENTIVE OBSTETRICS AND PEDIATRICS\*

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It is a real privilege to address this section of the Oklahoma State Medical Association upon a subject which is now commanding the thoughtful attention of progressive members of our profession throughout the whole country. It is peculiarly appropriate to discuss this subject in a State where pioneer virtues still prevail and the medical profession maintain an open-mindedness and candor highly commendable. Having been born and raised in the middle West I intend to speak a language all can understand and "to paint the thing as we see it for the god of things as they are."

In the first place I want to congratulate Oklahoma upon its entrance into the Birth and Death Registration areas of the United States. This in itself is a decided step forward in the program of preventive obstetrics and pediatrics. Without complete and accurate statistics of births and deaths it is impossible for us to tell whether or not we are making any impression upon the maternal and infant mortality within the borders of the State. The figures compiled by the Oklahoma State Bureau of Vital Statistics for the year 1927 reveal that of the 3,265 babies who died under one year of age, 1,766, or 54 per cent, lost their lives in the first month. In addition there were 1,467 still births. In

round numbers 1,500 infants died from prematurity and injuries sustained at birth. One thousand children under two years of age died from diarrhoeas of infancy, a cause which is steadily assuming less and less importance in many parts of the country. Broncho-pneumonia took a toll of almost 900 infants and young children. These and other figures which might be quoted challenge the best efforts of preventive obstetrics and pediatrics.

I must confess at the outset that I am far more interested in the normal, healthy mother and well, active baby than I am in the "diseases of women and children." While all recognize the importance of pathology as a foundation science in medicine we must agree that modern medicine has reached its highest goal only when it has become preventive and thoroughly integrated itself with the public health and community welfare. Whatever may be our theoretical concepts of the social order we must admit that the physician derives a large share of his education and experience from the community and in turn is guaranteed certain privileges and immunities on account of the service he renders. His work is largely with the individual, and will always remain so, but he must realize that modern society is very complex and many forces play upon the individual to stabilize or upset the health equilibrium. The practice of medicine implies the prevention of disease as well as its cure or amelioration. It should assume the larger responsibility of joining hands with other community resources to conserve and promote public health. Technical medical skill is called upon to cooperate with many other social agencies to advance community life. We have seen the vision. Have we courage and conviction to grasp the opportunities of preventive medicine?

It is to the credit of pediatrics and obstetrics that they have been pioneers in the field of preventive medicine. From the very first pediatrics as a specialty in medicine stressed the importance of the hygiene of infancy. The growth and development of the child have been of the greatest concern to the pediatricist. When departments of pediatrics were organized in our medical schools the need was soon felt for some form of community organization where medical students could come into first hand touch with the normal feeding and care of children. The infant welfare center was the first answer to this demand.

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

Thorough instruction in clinical pediatrics was coupled with practical experience in babies' dispensaries and well baby conferences. The mothers soon realized the importance of this work and called upon their physicians for advice as to normal feeding and prophylaxis against communicable diseases. At the present time our leading medical schools make provisions for comprehensive training in preventive pediatrics and obstetrics, and are offering well planned postgraduate and extension courses along these lines. Such courses stress:

1. Familiarity with the general methods of all social agencies in the community working for the welfare of the mother and child.
2. An intimate knowledge of the causes of maternal and infant mortality with the most approved methods for their prevention—infant hygiene and infant feeding.
3. A thorough knowledge of the technical procedures in obstetrics and pediatrics with experience in a maternity hospital, out-patient service and well babies' conferences.
4. The importance of prenatal care, adequate assistance at time of delivery and proper follow-up by trained public health nurses.
5. Cooperation between the medical profession and the public health authorities.

Preventive pediatrics and obstetrics depend upon three main factors for their successful application: (1) Education of the parents to make proper choice of a physician and consult him early and regularly for the routine examinations and hygienic advice; (2) Training of the medical profession to appreciate the necessity or desirability of detecting early departures from the normal and of instituting suitable prophylactic measures, and (3) Modern public health organization to assist the physician in keeping in closer touch with his patients and in utilizing all those community resources which prevent disease and promote health.

The public during the last decade has received an enormous amount of popular instruction along the lines of health education, some of it mere propaganda, but a saving fraction having to do with the things which actually make for health. One may say that the whole country has been "tuned in" with the health program. De-

mands are coming upon the medical profession and public health authorities which in many places cannot be met on account of inadequate organization and lack of understanding among the medical profession itself. In newspapers, magazines, and publications of state and national health organizations the public are being told that certain diseases are preventable; that it is possible to reduce maternal mortality by prenatal care and skilled obstetrics; that the infant mortality rate can be cut in half by better feeding methods and care of the mother during confinement. Many individuals and organizations are attempting to capitalize this popular wave of health enthusiasm. The obstetrician and pediatrician who appreciate the importance of preventive medicine and have had the training and experience to give the best advice should be the ones to lead in this modern movement for health education. The best child welfare literature stresses the importance of the mother early consulting a physician for hygienic advice and guidance both for herself and her child. How will the physician interested in obstetrics and pediatrics meet this widespread demand? Will he give the impression that he is not interested in normal, well babies and in mothers seeking prenatal care or will he accept the responsibility for prevention and take the time and patience to carry out thorough, periodic examinations of the apparently well in order to detect the simple deviations from normal at a time when much can be done to correct them and thus prevent more serious conditions from arising?

While the day of the specialist is at hand we must not overlook the fact that the general practitioner is still doing the largest amount of obstetrics and pediatrics. This is especially so in the rural sections of the United States. Obstetrics and pediatrics as specialties will continue to grow in importance and the technics developed by them will be of the greatest importance in assisting the general practitioner. The opportunities for a wide application of preventive measures, however, will continue to rest with those who come into first hand contact with the families. The profession of medicine should welcome these opportunities. The measures to be applied are not complex and occult but very simple when once the first principles of preventive obstetrics and pediatrics are understood. For the adequate care of the prospective

mother the following preventive methods may be considered the minimum:

1. All pregnant women should be encouraged to place themselves under competent medical care as early as possible.

2. A careful, detailed routine examination should be given every prospective mother early in pregnancy and she should be kept under medical supervision throughout her entire pregnancy.

3. Simple, detailed, prenatal advice should go hand in hand with the prenatal care.

4. A careful, well kept pregnancy record should be followed by the physician.

5. In addition to the routine physical examination especial attention should be given the pelvic measurements.

6. The physician should consider it his duty to see the patient regularly, take a blood pressure reading, make a urine examination and record the pulse, temperature and weight at each visit. A Wassermann test is very desirable, even if no suspicion of specific disease arises.

7. It should be remembered that no amount of prenatal care, however, excellent, can forstall a serious outcome if the physician does not exercise good diagnostic ability, good judgment, technical skill, and refrain from bizarre methods of delivery and radical procedures at the time of delivery. There is no question that unnecessary haste and the decided trend towards operative obstetrics are largely responsible for the continued high maternal and neonatal mortality. A clear indication should always be present before any operative procedure is employed.

8. Every woman should receive a thorough examination a month or six weeks after delivery.

9. The public health nurse and competent bedside care may be looked upon as essentials for the practice of preventive obstetrics.

The preventive measures to be employed in preventive pediatrics are even more simple than those enumerated for obstetrics. They include the following:

1. The use of community facilities to bring the children in touch with a physician for a complete, routine physical examination.

2. Complete records of the findings of physical examination and encouragement of mother by the physician and public

health nurse to carry out recommendations.

3. General hygienic advice as to feeding, clothing, sunning, etc.

4. Simplified methods of infant feeding to be specifically outlined by the physician and followed up in the home by the public health nurse.

5. Provisions for immunization in those diseases for which we have exact methods, as in smallpox and diphtheria.

6. The use of vital statistics by physician to check on the success of his endeavors.

It is evident that the public demand for preventive obstetrics and pediatrics is rapidly increasing. It is also true that more and more physicians are qualifying themselves to meet this demand. But society is so highly organized at present and so many factors in community life enter into the problem that the physician by himself cannot do everything he knows to be desirable without the assistance of organized public health methods. He is led to cooperate with the public health agencies in his community to secure optimum results. The local health authorities should therefore offer the following:

1. Education of the public to demand better obstetrics and pediatric care.

2. Complete and accurate birth and death records and a compilation of the same which will be of assistance to the practicing physicians.

3. A follow up of all maternal and neonatal deaths with determination of exact cause.

4. Facilities for public health nursing and a follow up of cases.

5. In the more highly organized communities the establishment of prenatal and infant welfare centers.

6. Laboratory facilities for diagnosis and preparation and distribution of immunizing sera.

When the public, the health authorities and the physicians practicing preventive obstetrics and pediatrics are thus drawn into closer cooperative relationships we may expect a marked reduction in the maternal and infant death rates. The community will be greatly benefited and the physicians will enjoy the satisfaction of having made their contribution in preventive obstetrics and pediatrics.

## THE FUTURE OF OBSTETRICS IN OKLAHOMA—REPORTING PROGRESS\*

LUCILE SPIRE BLACHLY, M.D.  
OKLAHOMA CITY

In 1925, after one year's experience as director of the Bureau of Maternity and Infancy, I had the honor of presenting a paper before the Obstetric and Pediatric section entitled "Rural Obstetrics and Pediatrics in Oklahoma." One year later I read a paper on "Maternal and Infant Mortality." In the first I could do little more than report the facts concerning the inadequacy of all factors commonly considered necessary to the successful prosecution of a maternity and infancy program; and in the second I went more into detail concerning the lack of one of these essentials, namely, the inadequacy of reliable vital statistics.

### OKLAHOMA REACHES THE GOAL

Today, three years after my first appearance, I am happy to announce that at least the most fundamental of these deficiencies has been rectified: Oklahoma is now in both the birth and death registration areas. Word was wired to the Commissioner of Health to this effect only last month.

Those of you who were present in 1925 will recall that we recognized our problem to be to devise ways and means to insure the best obstetric and pediatric care possible to each mother under the existing conditions. Since we had no health centers, no clinics, no maternity and pediatric wards, no lying-in or children's hospitals, no public health nurses aside from our small group of five, no unofficial health organizations interested in the mother and child, our method of procedure was simplicity itself. We must rely wholly upon the medical profession, the general practitioner particularly. It we could build up a finer spirit of cooperation between the medical profession and the public we felt hopeful of eventual success.

In that first paper we listed somewhat in detail the activities we had carried on during the preceding year and those we hoped to carry on in the future. Briefly these included a comprehensive set of pre and postnatal letters with a liberal supply

of state and federal pamphlets. It also included exhibits, group demonstrations, public health talks, child health conferences, surveys, campaigns, motion pictures, organized classes, et cetera.

### REPORT OF ACTIVITIES

Today I desire to report officially, and for the first time to the medical profession, the scope of these activities; to comment upon the relative merits of some of them and to point out certain future possibilities.

From April 1, 1924, to December 30, 1927, the pre and postnatal letter service had been utilized directly by 30,587 mothers; 10,539 infants and pre-school children had been examined; 1,498 home visits made; approximately 16,062 individual conferences with mothers held; 198 state and county fairs attended, and a total of 178 classes conducted for mothers or potential mothers. These classes covered 84 in the public schools, 29 in the Indian boarding schools, 28 for mothers and 37 for teachers in training. By this means 2,130 girls in the public schools, 358 in the boarding schools, 346 mothers and 1,356 teachers in training were given more or less comprehensive courses in prenatal, infant and child care. In addition to this the Bureau of Maternity and Infancy assisted the State University Extension Department in 39 courses in post-graduate pediatrics; and in 7 in internal medicine; and in turn was assisted by this department in 13 brief courses in post-graduate obstetrics.

In addition to providing an instructor in obstetrics, the Bureau of Maternity and Infancy has brought into the state eight nationally known specialists in pediatrics and public health for from one to several addresses and for the examination of infants and pre-school children at two consecutive "baby rodeos".

The five state nurses have addressed 137,726 persons in 3142 talks; and the director, 19,832 persons, in 256 talks. In addition to these talks, many of which dealt in some degree with vital statistics, the Bureau of Maternity and Infancy paid the salaries of two vital statistics clerks for approximately 18 months each; all the salary of a full time field worker in vital statistics for 18 months, devoted approximately the full time of three of the state nurses for three months each in a final intensive birth and death survey; financed and directed fifty-five special rural repre-

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

sentatives at a cost of about \$500.00 to conduct a baby census in the rural districts in 1927; and brought to the state two special workers from the Children's Bureau in the final spurt which resulted in the admittance of our state to both the birth and death registration areas. About one-third of the salary of each of five of the county unit nurses is annually met by the Bureau of Maternity and Infancy.

#### RELATIVE MERITS OF THE VARIOUS ACTIVITIES

Unfortunately insufficient time has elapsed to permit a dependable perspective as to the relative merits of these various activities: neither have we as a people decided upon our objectives. Is it a "well begotten brood" we are working toward, or merely the prolongation of human life? Do we have in mind sound, safe, substantial home life inspired and stabilized by children who are morally, mentally and physically balanced, or is it merely good physical health and vigor we are aiming toward? Are we in a hurry to reach these, as yet, undetermined objectives or shall it be done in a more leisurely manner? What shall we buy with our present dollars—a better race or better personal material possessions? Anyone who is familiar with the state's resources knows we can afford one or the other or more than likely both if our dollars are spent thoughtfully. If our first objective is the prolongation of human life then the pre and postnatal letters and the post-graduate courses in pediatrics and obstetrics taken together undoubtedly occupy first place. That these letters and inclosures have profoundly improved the attitude of the mothers and prospective mothers toward the business of bearing children, no informed person will longer question. And although our records show only about 30,000 plus-mothers registered, it is common knowledge that everyone of these mothers has passed her literature and her experience on and on to other mothers. Likewise no informed person will question in any way the good done the unborn, the infant and the mother by the graduate courses in obstetrics and pediatrics.

#### THE GENERAL PRACTITIONER REPORTS MOST BIRTHS

Incidentally it should be noted that in a survey made by the federal bureau of the census this past summer it was shown that of the approximately 25,000 births reported the first half of 1927 only 666 were re-

ported by midwives and that the total number reported by the five physicians of each county reporting the largest number, 11 percent were reported by obstetricians and 89 per cent by general practitioners. Likewise among these 385 physicians, which is approximately one-seventh of all the physicians of the state, 39 per cent were obstetricians and 61 per cent general practitioners. In other words two-fifths of all the babies were reported by one-seventh of all the doctors, 61 per cent of whom were family physicians, showing it would appear, a tendency on the part of the general practitioner toward specialization. By the same token the number of physicians listed in the American Medical Directory as preferring pediatrics has increased from 32 in 1923 to 51 in 1927, and the number of physicians listing themselves as obstetricians has increased from 44 in 1923 to 59 in 1927, even though the total number of doctors has decreased from 2600 to 2467.

#### IS IT QUANTITY OR QUALITY WE DESIRE?

If, however, it is not only prolongation of human life we are aiming towards, but the creation of a superior people, then who can estimate the value of the course in child care given the potential mothers of varying ages in the various schools? Over and over again the teachers in training have assured us that the courses have been the most practical they have ever had in college, and if vocational education at public expense is justified at all it would certainly appear to be justified in this vocation of creating society's future citizens. The question of expense naturally presents itself at this point. By careful calculation it would seem that a full one-hour credit course, that is 16 class periods, could be covered in this important subject in the teacher training colleges and other schools of higher learning at a total per capita of \$2.00 for classes of twenty-five, or \$1.00 for double the number. In other words the entire student population in these higher schools, men and women alike, could be reached at a total cost of approximately \$15,000 for the larger classes or \$30,000 for the smaller. When this expense is contrasted with the cost in wasted effort required in the slow, tedious, discouraging methods of getting groups of mothers together for brief four or five unit courses presented to them while distracted by more or less numerous progeny, the cost sinks into insignificance. Likewise, to refer to the findings and views expressed recently

by probably the best informed of all our modern obstetricians on our present neonatal infant mortality problem, Dr. Fred Adair of Minneapolis, if we are to appreciably lower this needlessly high rate more attention must be given to pre-marital and pre-conceptional education. I need but call your attention to the fact that our own statistics for 1927 show a total of 1467 still births with exactly the same number of infant deaths under two weeks of age. You will note on the charts that the total deaths under one month, that is, 1766, exceeds the total deaths from one month to 12 months—a total of 11 months by 267.

What effect the intelligent wholesome presentation of the subject of child care by competent nurses of the right attitude will have on shaping the future behavior patterns of the adolescent girls as found in the Junior High schools and in the upper grades in the country only time will tell. I desire to digress a bit here to say that we have also experimented with the plan of presenting this important subject to both boys and girls alike and together in the upper grades in certain rural and small town schools with only the happiest and most encouraging results in so far as can be determined at the present time.

#### FROM P. T. BARNUM TO PUBLIC HEALTH

If the letters themselves and the classes have proved their worth and no informed person will question either, neither have the child health conferences been in vain. These, however, have been carried on more slowly and in what might be defined in an experimental manner. When one recalls that originally these conferences were purely publicity devices created by P. T. Barnum, the difficulties encountered in raising them to the level of dignified, serious, public health measures becomes apparent. Four years ago it was easy to find a group of women or some commercial firm eager to sponsor a baby show, but only in the rural districts did we find an intelligent appreciation of the physical examination of the child itself for its own sake and, we must confess, this appreciation was influenced by the fact that the examination was done gratis. Our aim, of course, has always been to get these examinations made at periodic intervals by the family physician in his office. The problem was to find a workable method. The plans in use in other states were experimented with with more or less confusion, misunderstanding and suspicion on the part of both the medical profession and

the laity and with doubtful satisfaction to ourselves. The baby show seemed well established: likewise the fortunate and favored maternal public had been "sold" on the idea of scoring the baby so whenever we attempted a child health conference only the better babies were brought. The physician complained of the futility of ever getting those who especially needed the examinations and these mothers, already overburdened and crushed down with under par children, hesitated to suffer further humiliation by having their offspring compared with those of the former.

#### THE FAMILY PHYSICIAN AS HEALTH COUNSELOR

Eventually, however, the Children's Bureau printed a four-page record sheet for standard use in city clinics that we found practicable in making possible the introduction of the accepted plan of the A. M. A., that is, the periodic physical examination, using the family physician to make this examination. These blanks are sufficiently thin to permit their being made out in duplicate. The mother then has an identical copy of her child's physical findings so she no longer suspects collusion between her own and the visiting physician. Ample space appears on the chart to permit six consecutive examinations. She is instructed as to the merits of an accurate health history of her child and is charged with the responsibility of taking her child to her own physician on each birthday for the second and subsequent examinations. Written advise relative to vaccination and immunization and general hygiene is given. Printed feeding charts are available for the mother of the infant and the pre-school child. No formulae are written and no feeding directions given if the child's diet is already being prescribed by the physician. Unfortunately, inadequate follow-up has been done, due to the extremely small number of nurses on the staff, but we are frequently informed of the readiness with which the children are brought in for correction of the defects. Taken by and large, only some prejudice on the part of one or the other parent, or lack of funds prevents the correction of the defects.

#### FUTURE POSSIBILITIES

The progress made in the past four years leads me to believe with the present splendid cooperation existing between the Bureau of Maternity and Infancy and all the official and unofficial organizations in-

terested in the mother and the child, if continued for a decade, will make possible adequate obstetric care and adequate pediatric care for every mother and babe in the state.

Fundamentally it is merely a matter of education. Self preservation is the first law of life, preservation of the species comes a close second. These mothers want to live—they want their babies to live and if they resent the physician's well intentioned efforts to give them the best care they are capable of it is merely because the physician has first failed to convince them of the superiority of the newer methods. To assist the physician to do this is our humble part.

#### KANSAS CITY FALL CLINICAL CONFERENCE

The subject matter at the vast majority of the larger medical meetings is of such a character as to be of little, if any, benefit to the general practitioner. He is unable to digest the vast array of statistical data and laboratory investigations that must find place in an ultra-scientific

paper. Later, at his leisure, it is possible for him to read in his Journal the very papers he listened to and cull from them the practical application of such parts as are of interest to him and of actual value in his work.

The practicability of the subject chosen for the Annual Fall Clinical Conference at Kansas City is well shown by a brief inspection of the program printed on page 26, of this issue. While this program may not arouse any marked enthusiasm on the part of the specialist, it will undoubtedly appeal strongly to the general practitioner as a practical post-graduate course in his every day problems. It is the purpose of the Clinical Society this fall to present only such practical subjects and discuss the problems of the busy man in general medicine.

#### REGURGITATION OF ENDOMETRIAL TISSUE THROUGH FALLOPIAN TUBE DURING OPERATIVE PROCEDURES.

Clinical and experimental study has convinced Edward Allen, Chicago (Journal A. M. A., Feb. 18, 1928), that any operative procedure that increases intra-uterine pressure may displace endometrium into the peritoneal cavity, thus confirming Sampson's theory of regurgitation of tubal and uterine epithelium through the fallopian tubes into the free pelvic cavity.

### Report of Examination for Licenses to Practice Medicine

Report of Oklahoma Board of Medical Examiners, held in Senate Chamber, State Capitol, Oklahoma City, June 12 and 13, 1928; number of subjects examined in, 12; total number of questions, 120; percentage required to pass, 75; total number examined 40; number passed, 40. All applicants, regular school of practice, and licensed by written application.

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Britton, Bloyce Hill	1902	Lineville, Ala.	University of Okla.	1928	Mt. Park, Ok.
Stephens, Audy B.	1904	Red Oak, Okla.	University of Okla.	1928	Red Oak, Ok.
Nagle, Patrick Sarsfield, Jr.	1902	Kingfisher, Okla.	University of Okla.	1928	Kingfisher, Ok.
Mills, Richard C	1892	Uniontown, Ark.	University of Okla.	1928	Norman, Ok.
McHale, Thomas Cecil		St. Louis, Mo.	University of Okla.	1928	Oklahoma City
Noell, Robert L.	1899	DeLeon, Texas	University of Okla.	1928	Moore, Ok.
Allgood, John Milton	1896	Summerfield, La.	University of Okla.	1928	Moore, Ok.
Price, Joe Holmes	1898	Robinson, Ill.	University of Okla.	1928	Oklahoma City
Ensey, James Elbert	1902	Beckham Co., Okla.	University of Okla.	1928	Norman, Ok.
Jeter, Perry Raleigh	1883	Alabama.	University of Okla.	1928	Oklahoma City
Hudiburg, Caziville Lawson	1901	Carney, Okla.	Washington Univ.	1928	Stillwater, Okla.
Hamby, Wallace Bernard	1903	Ennis, Texas	University of Okla.	1928	Wleetka, Ok.
Akin, Robert Howe	1904	Watonga, Okla.	University of Okla.	1928	Oklahoma City
Morgan, Thomas Richard		Mt. Camel, Pa.	University of Okla.	1928	Oklahoma City
Lindsay, Wren A.	1894	Fulton, Mo.	University of Okla.	1928	Norman, Ok.
Gallaher, Frank Clinton	1903	Arkinda, Ark.	Northwestern	1928	Shawnee, Ok.
Ford, Richard Blard	1902	Monroe, Okla.	University of Okla.	1928	Monroe, Ok.
DeArman, Thomas Milton	1902	Fairy, Texas	University of Okla.	1928	Oklahoma City
Hanson O. H.	1899	Pittsburg, Kan.	University of Okla.	1928	El Reno, Ok.
Lamb, Lealon E		Paragould, Ark.	University of Okla.	1928	Clinton, Ok.
Irby, J. P.	1903	Ardmore, Okla.	University of Okla.	1928	Turley, Ok.
Gray, Floyd	1895	Mt. View, Okla.	University of Okla.	1928	Oklahoma City
Ferguson, Lawrence W.	1903	Lexington, Okla.	University of Okla.	1928	Mt. Park, Ok.
Sheets, Marion Egrigton	1900	Tonkawa, Okla.	University of Okla.	1928	Tonkawa, Ok.
Alexander, Samuel Howard	1903	Lavonia, Ga.	University of Okla.	1928	Oklahoma City
Curtis, Selvie J.	1903	Tennessee	University of Okla.	1928	Oklahoma City
Warren, Roy Chester	1899	Cleburne, Texas	University of Okla.	1928	Temple, Ok.
O'Donoghue, Don Horatio	1900	Storm Lake, Iowa	University of Okla.	1928	Oklahoma City
Campbell, James Franklin	1903	Evanston, Ill.	University of Okla.	1928	Oklahoma City
Charney, Louis Harry	1903	Armstrong, Iowa	University of Okla.	1928	Henryetta, Ok.
Duncan, Darrell Gordon	1904	Waldron, Ark.	University of Okla.	1928	Ada, Ok.
Baum, Ernest Eldon	1895	Kansas City, Mo.	University of Okla.	1928	Oklahoma City
Kies, Benjamin Bernhardt	1893	Hoyleton, Ill.	University of Okla.	1928	Oklahoma City
Hart, Mabel M. (Mrs.)		Idaho Springs, Colo	University of Okla.	1928	Oklahoma City
Smith, Morris W.	1900	North Carolina	University of Okla.	1928	Oklahoma City
Martin, Thomas Reynold	1894	St. Jo, Texas	University of Okla.	1928	Walters, Ok.
Price, Joel Scott	1902	Oakwood, Okla.	University of Okla.	1928	Oklahoma City
Robertson, Charles Walter	1902	Jones, Okla.	University of Okla.	1928	Bristow, Ok.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under direction of the Council

Vol. XXI AUGUST, 1928 No. 8

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Entered at the Post Office at Muskogee, Oklahoma, as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### NEWER KNOWLEDGE OF VENOMOUS SNAKES

In a lifetime very few physicians are called upon to treat a victim of snake-bite, very few have ever seen a case of reaction from the bite of a venomous snake. The writer reared in a family of physicians and practicing in a country supposed to be infested with poisonous snakes, has only seen two such cases, one thirty years ago, the other within the last few days. Medical literature contains very little upon the subject; for years, perhaps the most authoritative information was contained in good encyclopedias, rather than the usual standard works available to the general practitioner.

Under the subject, the International Digest (April, 1928) recently presented an authoritative, scientific symposium, covering many phases of the matter, and suggests that further information may be obtained from the Bulletin of the Antivenin Institute of America, Box 1494, Philadelphia.

Much of our previous information, or misinformation, is entirely exploded, and that which we thought to be proper treatment, is gravely questioned.

Antivenin has been in use probably thirty years in India, where the Cobra has always exacted a frightful toll of life, but it remains, so far as the United States is concerned, for the last few years to perfect the securing and preparation of potent vaccine, for the control of the venom of the only three dangerous snakes of this country; these are the rattlers, of many varieties, and differing in different sections of the country; the water moccasin, or cotton-mouth; and the copperhead, sometimes referred to as the highland moccasin.

Due to the fact that thousands of people now penetrate into every possible out-of-the-way nook and corner of the country, naturally the menace has increased. My patient, a reliable man, is under the impression that five or six cases occur in his locality each year. Fortunately none of them were fatal; so, he has become an optimist, and doubts if Oklahoma snakes would be fatal to anyone. His bite occurred upon the index finger, as at dusk he reached down to get a stick to kill a "ground-rattler", its nearby partner happened to be by the stick. He had no treatment by physician until 30 hours had elapsed. Within five hours he noticed a tingling of the arm, accompanied by enormous swelling, chills and fever. The only treatment was local injection of potassium permanganate and application of the same. The hand, arm, side, penis and scrotum were involved in the swelling, and ecchymosis was marked for ten days.

Prevention lies in wearing puttees or boots — probably no fang can penetrate such leather — and care in moving the hands into the favorite hiding places of his snakeship, which are around the banks of streams, about bluffs and such inaccessible places.

do Amaril of Brazil, Barbour of Harvard, Ditmars, New York Zoologic Park, Col. Crimmins, U.S.A., M.C., have, and are

giving the subject their scientific investigation. Venom is secured from the thousands of snakes under do Amaril's control, while in the United States there are collecting stations at New Orleans, San Antonio and San Diego. The vaccine obtained is polyvalent for the three species mentioned above. In passing, it should be stated that all these, and most other venomous snakes of the world belong to the family of vipers, one of which it will be recalled was requisitioned by Cleopatra in her theatrical demise.

It is estimated that from 12 to 24 hours may elapse before antivenin may be used, but it should not be forgotten that the venom delivered directly into a vein might be fulminantly poisonous. There is a sharp divergence as to the technique of treatment, other than that there is agreement as to the efficacy of antivenin. do Amaril does not believe that crucial incision, bleeding or cupping is of any value, while Crimmins and Jackson hold directly opposite views. Strange to say do Amaril believes permanganate entirely useless, notwithstanding that thousands of outdoor men in this country and all tropical countries are constantly supplied with this drug and a hypodermic for emergency use. do Amaril states that it is not uncommon for snakes to harbor tetanus and gas bacillus infection, and that incisions only invite invasion of the system by a much more dreaded infection than the original. A tourniquet should be tightly applied above the bite, but must be released for a few seconds at intervals of from five to 10 minutes, in order to maintain necessary circulation. The entire subject is intensely interesting, too long for proper elaboration here. It is suggested that those interested secure the bulletin mentioned. Venomous snakes are to be found within sight of New York City, across the hills of the Hudson, and generally over the United States, except in the Northern New England States.

Mortality from the average 1500 snake-bites in Brazil annually, formerly 150 deaths, has been reduced to three or four deaths annually, due to the use of antivenin.

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## THE PREVENTION OF BLINDNESS

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The remarkable progress in 20 years due to organized efforts to reduce blindness in America is shown in a summary of accomplishments recently announced to members by the National Society for the Prevention

of Blindness. The society believes its greatest single achievement has been in the field of ophthalmia neonatorum. As a result of adoption of laws, in most states, requiring doctors, nurses and others in attendance, to use prophylaxis at birth, and constant educational activities of the society, frequency from this cause has diminished each year until it is 64 per cent less than in 1908. It is believed that complete eradication of this cause is scientifically possible.

A great feature of the society's work is pre-school tests and clinics, in order to save the eye sight and prevent seriously defective vision in the beginners in school, who, handicapped by visional defects, may have an utterly ruined eye sight if the defects are not noted and are not corrected. In 80 cities, 292 classes are in operation where those with defective vision are taught through the medium of special large type books, movable desks, ideal lighting and special teaching methods. This gives children with little vision the same sort of education which those with full vision receive and they are taught how to conserve their remaining sight. It is estimated that 5,000 such classes are needed in the United States.

Hope is expressed that some advancement in the control of trachoma may be made, inasmuch as some definite understanding of the causative factors underlying the disease is now believed attainable by the recent work of the late Dr. Hideyo Noguchi, who devoted much of the last years of his life upon research connected with the subject.

It is announced that there will be no cessation of insistence all along the line that every industrial worker be given all possible protection against the special hazards incident to his occupation.

While much of this work is directed by lay and altruistic organizations, under stimulus from the National Society, it must not be forgotten that the family physician occupies a commanding position, and is more or less in position to render his clientele service in keeping in mind potential dangers to eye sight. Especially at this time of year, when thousands of children are about to enter upon school work, is the physician and advisor of the family in position to advise proper protective examination by the expert ophthalmologist.

REPORT OF OKLAHOMA STATE DELEGATES TO AMERICAN MEDICAL ASSOCIATION, MINNEAPOLIS, MINNESOTA, JUNE 11-16, 1928.

It is not the intention of your delegates to go into detail on transactions in the House of Delegates, but rather to give a synopsis of matters apparently of interest. For full report see American Medical Association Journals of June 16th and 23rd.

The speaker of the House of Delegates, Dr. F. C. Warnshuis, in his address brought into question the precedent, as heretofore practiced, of the speaker addressing the House upon policies, affairs or obligations of the House of Delegates. He stated that while parliamentary manuals were silent upon this point he believed it not within the scope of his duties since the President and Board of Trustees were already empowered to so address the House. Upon recommendation of the speaker, a resolution was adopted relieving the speaker of such duty.

Dr. Jabez North Jackson, our past president, in his address to the House of Delegates, very aptly pointed to the reasons for the scarcity of doctors in rural communities, stating that forty years ago doctors were busy treating typhoid fever, malaria, dysentery and bowel complaints of infants, all of which have to a great extent, been exterminated by the application of medical science, and consequently took much of the doctor's income, this making it necessary for the doctor to serve a larger population and larger territory.

Again, Dr. Jackson aptly pointed to economic danger and unfairness to both doctor and public, of charity institutions receiving patients able to pay for medical or surgical service in which the right of the physician to charge is denied by the institution.

The incoming president, Dr. W. S. Thayer, in his address called especial attention to the report of the Secretary-Manager in which he cautioned against the present tendency toward over-organization of the medical profession. He recognized the value of specialized and local medical organizations though gave emphasis to his statement that none of these organizations in any sense take the place of the county, state and national medical associations, to which every physician owes his primary loyalty and without which American medicine would be chaotic. He also called at-

tention to the fight being made by the legal department of the American Medical Association for the deduction from income tax of physicians' expenses while attending medical associations, which had been recognized and accepted for the professions though denied the medical and dental professions.

REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Arthur Dean Bevan, chairman, in his supplementary report to the House of Delegates stressed the work of the Council on the study, investigation and classification of hospitals as one of the most, if not the most important matter before the American Medical Association. Not only does he stress the hospital as a necessity in care of the sick but as a necessary requisite in the practice of modern scientific medicine. The purpose of this study and investigation is that the council may act in an advisory capacity to elevate the standard of hospitals.

The report points to the fact that in the United States we still have operating six medical schools not recognized by licensed boards of from forty-seven to fifty states; one in Illinois, three in Missouri, two in Massachusetts. This report also points out the urgent necessity for action against institutions and corporations assuming the right of the individual who is especially qualified and licensed, to practice medicine.

Resolutions on Medical Education by Southgate Leigh pertaining to shortening medical courses to three years of four quarters each as now proposed for Duke University was referred to reference committee on medical education. The committee reported back to the House that while impossible to adequately consider so important a topic within the limits of time at that meeting the committee would endorse the substance of the resolution to the following effect:

- (1). That it would be most desirable that medical students should graduate and enter practice earlier than at present.
- (2). That the plan of covering the medical course in three years of four quarters, instead of four years of three quarters, with long intervals of vacation as illustrated by Duke University, or other plans, is greatly to be desired.

- (3). That the medical course is overcrowded with detailed consideration of specialties and would be improved by a less crowded course confined more to essentials and fundamentals.

This report was adopted.

The Board of Trustees in their supplementary report announced that Dr. E. O. Crossman of the Medical Department of the United States Veneral Bureau, had offered his cooperation with the Board in their attempt to search out the justice of complaints which had been made against the United States Veterans Bureau for what in certain districts appeared to have been unlimited free medical service to claimants. They referred this matter to a committee on Comity whom they believed, after a conference with Dr. Crossman, would satisfactorily adjust the matter.

After adjournment, it was a general expression, that taken as a whole, each session of the House of Delegates was characterized by more harmony and sincere endeavor to solve the many matters of business and problems presented, than has been experienced during the past several years.

MCLAIN ROGERS, M.D.  
EVERETT S. LAIN, M.D.  
WM. ALBERT COOK, M.D.

#### PERTINENT PRE-SCHOOL SUGGESTIONS

Eyes.  
Teeth.  
Adenoids.  
Tonsils.  
Toxin Antitoxin.  
Schick Test.  
Vaccination.

A general physical examination and fitting suggestions based upon the findings.

#### *Editorial Notes — Personal and General*

DR. J. ARTHUR MULLINS, Marlow, attended Kansas City clinics in July.

DR. R. N. SMITH, Tulsa, announces the opening of his office at 703 Medical Arts Building.

DR. L. S. WILLOUR, McAlester, has removed his office to Suite 203-204 Ainsworth Building.

DR. W. ALBERT COOK, Tulsa, accompanied by his family, is visiting Rocky Mountain points.

DR. and MRS. J. HUTCHINGS WHITE, Muskogee, will spend the summer in Minnesota.

DR. A. L. MOBLY, Muskogee, and family, visited Memphis and Little Rock in August.

DR. L. E. EMANUEL and son, Chickasha, are spending their vacation in New Mexico.

DR. and MRS. HOLCOMBE, Muskogee, have returned from a visit to Colorado Springs.

DR. R. L. MITCHELL, Muskogee, is spending his vacation in New Mexico and Arizona.

DR. J. C. REYNOLDS, Frederick, is confined to his home suffering from blood poisoning.

DR. J. E. ARRINGTON, Frederick, has returned home after an extensive visit in Boulder, Colorado.

DR. A. C. SYFERT, formerly of Blackwell, is now located at 419 Perrine Building, Oklahoma City.

DR. M. SHADID and daughter, Elk City, who have been touring Europe the past several months, will return shortly before September 1st.

DR. and MRS. V. C. TISDAL, Elk City, returned July 21, after several months spent in European countries, during which time Dr. Tisdal took post graduate work.

DR. GUY B. VAN SANDT, Wewoka, has announced that the hospital which he is constructing has been incorporated under the name of the Wewoka Hospital Company. Dr. Van Sandt will be one of the chief owners in the company.

DR. J. W. MOORE, Tonkawa, has just returned from the Government Hospital at Hot Springs, Arkansas, where he has been doing some special work. On his return he will locate in Enid, where he will be affiliated with the University Hospital.

DR. W. T. TILLY, Muskogee surgeon, closed his hospital July 31, which he has operated for the past 16 years. Dr. Tilly plans to continue in private practice and his hospital work will be divided between the Baptist and the new City Hospital.

STEPHENS COUNTY MEDICAL SOCIETY met in Duncan July 24th. The hosts were Drs. J. D. Pate and A. M. McMahan. Steps were taken to prosecute illegal practitioners, among the number a druggist holding himself out to be a specialist.

DR. JOHN W. RILEY, Oklahoma City, is making extensive visits to European clinics. Dr. Riley recently favored the Journal with a copy of an address delivered June 27th by Professor A. Calmette upon "Preventive Vaccination Against Tuberculosis By the B. C. G." (Bacillus-Calmette Guerin).

LINCOLN COUNTY MEDICAL SOCIETY met in regular session with Dr. J. O. Glenn, Stroud, for the June session. The following members were present: Drs. J. O. Glenn and W. D. Baird, Stroud; E. C. Brown, Sparks, J. W. Adams, W. H.

Davis, W. P. Cottrell, R. E. Dickson and J. M. Hancock, all of Chandler. Visitors present were: Drs. C. P. Bondurant, John F. Kuhn, Basil Hays, Austin Guthrie and G. F. Mathews, Oklahoma City, and Melvin Frye, Stroud. Dr. G. F. Mathews, who came to fill Dr. Ricks' place, was introduced and discussed the very great importance of accurately reporting all diseases required by law and the enforcement of quarantine to prevent the spread of disease. Dr. Kuhn talked on the importance of the control of gonorrhea and syphilis. Dr. Bondurant was then introduced and with the aid of the lantern gave a review of skin manifestation in different diseases.

**STEPHENS COUNTY MEDICAL SOCIETY** held their regular monthly meeting July 4th. Drs. Caraker and Nieweg were hosts. The following members were present: Drs. Patterson, Caraker, Richards, Chumley, Bartley, McMahan, Long, Ivy, Salmon, Weedn, G. C. Hall, Smith, Overton, Carmichael, Burnett, Williamson, Talley, McLain and Nieweg. Dr. W. R. Mote was a visitor.

#### 320TH MEDICAL REGIMENT AT CAMP

The following Oklahomans, members of the 320th Medical Regiment attended two weeks of intensive training at Ft. Sam Houston, Texas, the first two weeks of July:

Aisenstadt, Albert E., Picher.  
 Bailey, Wm. H., Oklahoma City.  
 Cooley, Ben Hunter, Norman.  
 Hancock, Joseph M., Chandler.  
 Hansen, Geo. E.  
 Hartshorne, Geo. E., Tulsa.  
 Holcombe, Roland M., Muskogee.  
 Hughes, Arthur O.  
 Johnson, Geo. E., Ardmore.  
 Kay, John H., Holdenville.  
 Kitchen, John C., Picher.  
 Lowenthal, Frank V., Muskogee.  
 Lash, Cleo L.  
 Mayfield, Warren T., Norman.  
 McGregor, Frank H., Mangum.  
 Moore, John D., Hugo.  
 Mylund, Geo. A., Gate.  
 Oakes, Clay Otis.  
 Puckett, Carl, Oklahoma City.  
 Sebastian, Joseph W.  
 Schlicht, John C., North McAlester.  
 Templin, Oscar E., Alva.  
 Willour, Leonard S., McAlester.  
 Vittum, Jas. S., Muskogee.  
 Armstrong, David, Durant.  
 Hubbard, J. C., Oklahoma City.  
 Waite, Will C., McAlester.  
 Little, D. E., Eufaula.

#### DOCTOR JOSEPH F. MESSENBAUGH

Dr. J. F. Messenbaugh, for twenty-eight years a prominent practitioner of Oklahoma City, died June 19, 1928, after several months' illness, the cause of death being peritonitis.

Dr. Messenbaugh was born 55 years ago, graduating from Washington University Medical School in 1898, after which he took his postgraduate work in Chicago, New York and New Orleans. Moving to Oklahoma City in 1900, he acquired a large clientele and always held the admiration and respect of his colleagues. He was married

to Miss Laura Whisler, in 1907, and is survived by his widow and two children, Joseph F., Jr., and Edith F.

Dr. Messenbaugh, in addition to his professional work, always took great interest in civic affairs and was one of the men who made Oklahoma City a more worth while city. He was elected to the Mayoralty in 1904 by a large majority, serving in that office for two years. He was president of the Washington University Alumni Association, and since his location in Oklahoma has been a member of Oklahoma County, the State and American Medical associations, besides holding membership in other special scientific bodies. His passing is sincerely mourned by a host of friends who realized his fitness. His city and state sustain a great loss in his untimely passing.

#### Who Gave His Best

Thou art gone, dear Friend,  
 But thy lamp still burns.  
 Across our path, death doth send  
 A shadow, but thy gracious memory  
 Shines without end.  
 Thy love-light is Eternal,  
 Thou hast slipped away so silently,  
 That, with thy years of long and weary toil  
 We can but call to mind,  
 Thy loving, lingering message:  
 To those who trust their God  
 For them, to die is but to live again.  
 Friend of the Friendless, Brother of Man-  
 kind,  
 Thine ever helpful hands do rest,  
 As with out heads uncrowned  
 We speak no sad farewell,  
 But say adieu to him—Who gave his best.  
 —By H. Coulter Todd.

To my friend Dr. J. F. Messenbaugh,  
 1903-1928.

#### INTERSTATE POST-GRADUATE ASSOCIATION WILL MEET IN ATLANTA

For the first time in the South there will be held a medical association whose procedure is unique and of remarkable interest.

The Interstate Post-Graduate Medical Association of North America will meet in Atlanta, Ga., October 13th to 19th, inclusive. This association in 1926 met in Cleveland, Ohio, where nearly 5,000 practicing physicians were registered. At the Kansas City meeting last October 5,200 were registered.

Those who come to this remarkable sort of medical meeting will really be given a post-graduate course by the leading medical men of this country and abroad. The daily meetings are held from 7 A. M. to 1 P. M., from 2 to 5 P. M. and from 8 to 10 P. M.. Everyone who has attended these meetings has been amazed by the magnitude of the work done, by its quality, by the number of distinguished guests and by the remarkable interest aroused.

It is hoped that every physician in the Southern States who can possibly do so will plan now to attend this meeting. The only charge imposed on physicians who are in good standing in their county, state and national organization is a registration fee of \$5.00.

## TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
912 Medical Arts Bldg., Oklahoma City

**Tissue Reaction in Tuberculosis.** R. S. Cunningham, M.D., *Am. Rev. Tb.*, June, 1928.

From the standpoint of general discussion the reactions which occur in the tissues in tuberculosis may be conventionally divided into tubercle and allergy.

Tubercle is the characteristic anatomical reaction which is the primary response of the tissues of susceptible animals.

Allergy is tissue reaction to reinfection which is dependent upon tissue sensitization.

Epithelioid cells, giant cells and lymphocytes are the three types which are primary factors in tubercle formation. The fibrous layer, developing later and consisting of connective tissue fibers and connective tissue cells is secondary in character.

Experimental work shows evidence that the epithelioid cells originate from the monocytes which are increased in tuberculosis.

In considering the relation to tuberculosis of the monocyte and the epithelioid cell, two questions present themselves, the answers to which would materially assist in the exposition of the nature of the tissue immunity in tuberculosis: (1) Is it possible to utilize the monocytes of the circulating blood as an index of the state of tuberculosis? (2) Can the production or activities of these cells be modified, and, if so, what effect would such changes have upon the progress of the disease?

The first question is answered in the affirmative and the author and others doing this work are seeking a method of controlling the production or activities of these cells, whereby their relation to susceptibility and resistance may be accurately determined and controlled.

In order to unravel the basic reactions which nature is using in the healing of tuberculous processes, the author thinks we must analyze more carefully the primary reactions of the individual cells concerned in tubercle and allergy; the most important of which are the monocytes and lymphocytes.

**Tuberculous Infection of the Lung in Early Infancy.** Jerome L. Kohn, M.D., *Am. Rev. of Tb.*, June, 1928.

This is a case report of a child 12 weeks old.

**Chief Complaint:** Difficulty in breathing for three weeks. There was no history of tuberculosis in the family and no positive history of direct exposure. The patient was sent to the hospital with a diagnosis of thymic obstruction or aspiration of a foreign body. Bronchoscopic examination showed almost complete bronchostenosis and a roentgenograph showed atelectasis of the right upper lobe. There was emphysema of the lower lobe due to partial stenosis of the lower bronchus.

A roentgenograph taken 8 days later showed partial aeration of the right upper lobe with decrease in volume of the right lower lobe. The child was breathing much more easily. It had received two treatments of deep roentgen rays irradiation before admission.

The child was readmitted three weeks later due to return of the dyspnea. The X-ray again showed atelectasis of the right upper lobe and emphysema

of the lower lobe. Two treatments of deep roentgen ray irradiation were given with relief of the dyspnea soon afterward and an X-ray taken two weeks later showed only moderate atelectasis. An X-ray taken four weeks after second admission showed for the first time, a dense shadow at the root of the right lung, probably due to enlarged diseased lymph nodes. X-ray five and one-half months after onset showed for the first time signs of infiltration in right upper lobe.

Three years after onset an X-ray showed evidence of healing with a calcified primary lesion, the size of a pea, at the site of the previous infiltration and also caseation of the lymph nodes at the right hilum. Five years after the onset the X-ray showed the primary lesion to be still more compact and the lymph nodes gave a denser shadow.

The prognosis of tuberculosis even in early infancy is not necessarily fatal. This child developed normally and is in excellent health over five years after it first came under observation.

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## EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.  
726 Mayo Bldg., Tulsa

**Perithelioma of the Orbit.** Bledsoe, R. W. *Am. J. Ophth.*, 1928, xi, 3, 21.

The patient whose case is reported was a boy 11 years of age, who presented a swelling of the right upper eyelid. The skin was loosely attached to a hard nodular mass. At operation, the mass was found to be a perithelioma apparently springing from the roof of the orbit. Soon after its removal it recurred. A second operation resulted in symptomatic relief, but was followed by a second recurrence. The orbit was then exenterated for the relief of pain, but the tumor again recurred very rapidly. Post-mortem examination revealed extensive intracranial masses of tumor but no other metastases.

**The Technique of the Removal of Cysts and Sinuses of the Thyroglossal Duct.** Sistrunk, W. E. *Surg. Gynec. and Obst.*, 1928, xlvii, 109.

Sistrunk explains the formation of cysts of the thyroglossal duct on the basis of an abnormality in the development of the duct following the descent of the thyroid gland. When the duct fails to close completely and the foramen caecum fails to remain open, a cyst is formed by the retained secretion. The cyst is always in or near the median line.

In the technique used by Sistrunk for the removal of cysts and sinuses of the thyroglossal duct, the course of the sinus tract is outlined with injected methylene blue. The cyst is then exposed through a longitudinal excision and dissected free from the hyoid bone, from the center of which a small segment is removed. The foramen caecum is then located and the duct and surrounding tissues are cored out from below upward to the foramen.

The author gives exact directions for determining the course of the duct. This method obviates the risk of fragmentation of the duct with retraction and loss of segments.

**General Sepsis of Otitic Origin: Treatment by Blood Transfusion and Germicidal Dye.** Lillie, H. I. *Arch. Otolaryngol.* 1928, vii, 30.

The author reports twelve cases of general sepsis of otitic origin treated by blood transfusion with or without the intravenous injection of a germicidal dye. He is not prepared to say whether the combined method or blood transfusion alone is preferable as the patients who were treated with blood transfusion alone seem to progress as well as the others.

Untoward results have been reported from the use of the methods under discussion, but the danger can be reduced to the minimum if the services of an expert haematologist or biochemist are obtained. Interns and house officers are usually not sufficiently experienced in the use of these specialized therapeutic measures.

From his own experience and that of others, the author concludes that blood transfusion and the injection of a germicidal dye as adjunct therapeutic measures are rational if the cases are properly chosen and the agents properly prepared and administered. The supportive effect of blood transfusion shortens the convalescence, and the germicidal dye has a curative effect.

Lillie neither advocates nor defends the use of these measures, but believes they have a place in the management of sepsis of otitic origin.

**Focal Infection and Elective Localization in the Pathogenesis of Diseases of the Eye.** Rosenow, E. C.: *Ann. Otol., Rhinol. & Laryngol.*, 1927, xxxvi, 883.

The author reviews the more important clinical and experimental studies on the pathogenesis of non-syphilitic and non-tuberculous intrinsic infections of the eye and the requirements for the successful application of the methods of study. The method of intravenous injection of primary (often mixed) or freshly isolated, pure cultures of material from foci of infection has led to a better understanding of how these seemingly harmless localized areas of infection, often small and in obscure places, cause ocular manifestations; and by this method the causative organisms usually responsible have frequently been isolated.

In the light of the newer knowledge, foci of infection, wherever found, should be looked upon as areas where bacteria and their toxic products are afforded favorable conditions for entrance into the blood or lymph stream, where they may acquire or maintain a peculiar or relatively high invasive power. They make for a forced relationship between the parasite and host.

The good effects commonly noted following the removal of foci of infection support the experimental findings, justify a thorough consideration of their existence, and call for removal or cure, as far as possible, of focal infection in every obscure clinical case. The successful application of the methods of study, while simple, require close cooperation between the bacteriologist and clinician. The experimental results indicate clearly that these lesions in the eye which are associated with exudation, even though slight, are usually due to the localization of microorganisms, while the milder manifestations may sometimes be due to the absorption of toxins which are formed in the focus or elsewhere and reach the eye in the blood stream.

Localization of the bacteria in the eye may sometimes be accidental and a part of other disease manifestations. However, the animal experiments, now amply corroborated, indicate clearly that, in most instances, localization and growth are due to peculiar acquired or inherent properties within the bacteria themselves and the power of the microorganisms to localize electively, and that this is due in part to the production of a toxin or poison which affects, specifically, the tissues in which localization and growth occur.

Among the microorganisms isolated which manifested the greatest elective localizing power and with which the common forms of diseases of the eye have been reproduced is a streptococcus which usually forms greenish or slightly haemolytic colonies on blood-agar and requires a reduced oxygen tension for its isolation, and from which autogenous therapeutic vaccines of great value in many cases have been prepared.

**Intranasal Surgical Treatment of Chronic Maxillary Sinusitis.** Hempstead, B. E.: *Arch. Otolaryngol.*, 1927, vi, 426.

In the technique used by the author for the intranasal surgical treatment of chronic maxillary sinusitis, anaesthesia is induced by means of cocaine-epinephrine mud on applicators placed in the region of the anterior ethmoidal nerves and the sphenopalatine ganglion. A pledget of cotton soaked in a 10 per cent solution of cocaine is placed under the lower turbinate. The mucous membrane at the anterior end of the lower turbinate is injected with a 0.2 per cent solution of cocaine.

An incision is then made through the anterior attachment of the lower turbinate so that the latter can be broken upward and the lower meatus exposed to full view. If a flap is desired to cover the edge of the window, the mucous membrane, together with the periosteum, is dissected free at the time. The Wilhelmsky trocar is inserted about half way back, and the wall is broken through. This allows the introduction of the cutting forceps. The window is enlarged posteriorly as far as desired. With a modified Kerrison punch, the window is brought far forward. If it is sufficiently large, there is little likelihood of its closing, particularly if the flap of periosteum and mucous membrane is saved and laid over the raw edges. An effort is made to make the window level with the floor of the nose. The edges are smoothed with either the rasp or the hand burr. The antrum is then cleaned with the suction tube, with the least possible trauma. The curette is not used in the antral cavity. A fair view of the greater part of the cavity is obtained by introducing a nasal speculum.

No packing is placed in the cavity, and further treatment is carried on by means of dry suction. Irrigation is never resorted to, as it causes a water-logged condition of the mucous membrane which is unfavorable to healing.

Large fistulae often close after the described treatment; if not, they are closed by elevating the edges and sliding over a flap of periosteum and mucous membrane from the palatal side, as advocated by Gardner.

## DERMATOLOGY AND RADIO-THERAPY

Edited by C. P. Bondurant, M.D.  
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### Industrial Dermatoses—Harry R. Foerster, M.D., Archives of Derm. and Syph., May, 1928.

As early as the sixteenth century impetiginous skin disorders and ulcerations were noted in those engaged in metal work and salt mining. Occupational skin disorders are now encountered in almost every field of industry. The first literary contribution on industrial dermatoses was given in 1700 by Ramazzini who later became known as the father of industrial hygiene. It is interesting to note that more than two hundred years after Baker's dermatitis was first described by him its exact etiology is still in doubt. Attention is called to problems presented in many other trades and industries, and opportunities and needs for investigation are indicated. The incidence of occupational skin diseases varies with the localities in which the studies are made and the social status of the group from which the deductions are drawn. The percentages of occupational dermatoses among all skin cases observed were reported as: two by Fordyce, ten by Guy Lane, sixteen by Knowles, twenty by Oppenheim, twenty by Hazen, and twenty-five by White. Occupational dermatoses comprise 5 per cent of 37,000 cases reviewed by Knowles. Of new dermatological cases in England about 300,000 annually are estimated. Of these 25,000 are considered occupational in origin. One hundred and twenty trades and occupations are recorded as productive of skin disorders. As high as 30 per cent of those employed in some industries develop industrial dermatitis. The wide introduction of workmen's compensation has done a great deal to improve the hygienic conditions and to offset many hazards to the skin. These cases are generally cared for by the industrial surgeon and only such cases as present special problems in therapy and diagnosis are referred to the dermatologist. Special reference is made to a uniform classification and to terminology. The progress made in this field is dependent upon accurate history inclusive of the time spent by the patient at that work, the irritant, and other carefully recorded information. Malignancies are mentioned as following injuries from radium, X-ray, arsenic, tar, and other physical injuries. Syphilis is credited with reducing industrial efficiency and recovery from industrial injury.

### Röntgen Ray Treatment of Acne Vulgaris—Jeffrey, C. Michael, M.D., Archives of Derm. and Syph., May, 1928.

The author reports on the end results of 191 cases and gives valuable comment on the evaluation and standardization of this form of therapy. He urges the systematic investigation of the end results in any therapeutic measure before its true value can be standardized. The total number of patients treated was 246, the end results obtained on 191. The procedure originally advocated by MacKee was employed. No untoward effects from the radiation was observed. The interval from the last treatment to time of determination of end results was at least one year. No record was included of a patient that did not receive at least ten treatments or  $2\frac{1}{4}$  skin units. Patients also received dietary regulations and correction

of functional and organic disturbances. Of the 191 cases in which the end results were studied relapses occurred in 35 per cent after the first course of treatment. A total of 85 per cent was recorded as successful, after the second course was given. The outstanding factor of recurrence was the age of the patient. Recurrences occurred in 44 per cent of patients 18 or under, and in only 7 per cent of those over 25. Systemic disorders such as constipation, focal infection, and digestive disturbances seemed only slightly to increase the number on recurrences. Focal infection was credited as the cause for recurrences in more cases than any other factor except age. The addition of a few treatments with a view of preventing recurrences after the disease had once been eradicated seemed of no value in this series of cases. A restricted carbohydrate diet seemed of little use as a routine measure. Menstrual disturbances or exacerbations of the disease at normal menstrual periods, the variety of the disease, marriage, the material status of the patient, the sex and location and duration of the disease were factors which did not seem to influence the effect of treatment. The majority of recurrences came during the six months immediately following the last treatment, 90 per cent of them occurring during the first year. Of the 191 cases, 101 were cured by the first course of treatment, 25 were greatly improved, and failure to eradicate the disease with one course of treatment was noted only in 24 cases. The author especially stresses the discontinuance of treatment when the lesions have disappeared.

### Scabies—Lightning Treatment in Three Hours—Wein, kl Woch Nr. 45, 1926.—Professor M. Oppenheim.

Professor M. Oppenheim recommends using the modified Hardy's lightning treatment for scabies and reports on 41,354 cases cured by this treatment at the Wilhelminen Hospital, Vienna, and also in his private practice. The method consists: first, dry rubbing the entire body and especially the places of predilection with soft soap and wood-wool for fifteen minutes; second, wash with soft soap and brush in bath for 30 minutes; third, the body is dried and anointed, particularly in places of predilection, with R. sulph. præcip. 25, pot. carbon. 10, vasel. flav. 125 gm. and the patient is then wrapped in a sheet and covered with a blanket for two hours; fourth, the patient is washed with soap and water and entire body rubbed with R. zinc. oxy., talc. venet. aa 15, vasel. flav. 30 gm. This completes the treatment but a mild pruritis may persist for a while as a consequence of the irritation. He urges strict after care in regard to clean underwear, bed clothes, and the concurrent treatment of all persons living in the same dwelling. For children under three years of age he uses the following: R sulph. præcip. cretae alb. zinc oxide aa 15 gm. vasel. flav. 45 gm. The entire body is rubbed with this twice daily for one week without changing the underwear, then a cleansing bath. The treatment may be repeated.

### Paget's Disease of the Nipple—J. Mestschanski. Dermat. Woch., Feb. 4, 1928.

The author gives a report of eight cases which had been clinically diagnosed Paget's Disease. The study is entirely histopathological. In one case the histopathological examination showed only inflammatory infiltration and in another only a typical proliferation of the lactiferous ducts. In the remaining cases unmistakable carcinoma

was demonstrated. This grew from the epidermis, lactiferous, and lacteal glands. True epithelioma was found in two cases. It was stated that Paget's cells could be seen wherever the nutritional processes of the tissue involved had been disturbed. In the true Paget's cases these cells were abundant and in some cases were noted in simple lacteal gland proliferation. The author is of the opinion that true Paget cells are degenerated vacuolated epithelial cells which have sprung from the basil or prickle cell layers and not from true cancer cells. The paper stresses the importance of early clinical recognition.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
717 North Robinson St., Oklahoma City

**The Etiology and Treatment of Scoliosis—Joseph I. Mitchell.** Arch. Surg., xvi, 680, March, 1928.

Reviewing 125 cases of scoliosis observed in the Willis C. Campbell clinic from 1919 to 1927, Mitchell pays particular attention to the results of treatment in the thirty-six patients who presented themselves in the last three years. His figures on the etiology are very much like those that have been obtained in all large clinics. In the matter of treatment, while there is stressed the importance of adaption of the method used to the individual case, there is, nevertheless, a distinct swing toward the operative type of treatment, namely, fusion of the spine. After careful pre-operative correction, fusion of the spine, with preference given to the osteoperiosteal graft, is recommended.

**Structural Scoliosis—Armitage Whitman, J. Am. Med. Assn., lxxxix, 2159, Dec. 24, 1927.**

Extreme deformities, in scoliosis, are difficult to stabilize by the Hibbs fusion and need additional bone grafted against the laminae for reinforcement.

The author describes a method of obtaining the graft and at the same time lessening the unsightly prominence of the angulated ribs. The usual fusion operation is carried out in so far as it is practicable; then an exposure is made of the convex ribs, and three or more sections are removed subperiosteally and placed on the concave side of the curve. Nine patients have been operated on in this manner and the results have justified the operation. The fusion was good, the deformity improved, and constitutional effect definite and salutary.

**Congenital Wry Neck—Walter Aberle. Ztschr. F. Orthop. Chir., xl, 1, Dec. 23, 1927.**

The author considers the congenital wry neck as a primary aberration of development which may be combined with other intrinsic malformations, and occurs often as a familial deformity. He distinguishes a number of types: first, cases in which there is obliquity and asymmetry of the head, but where changes of the tissues cannot be found in the sternocleidomastoid muscle by external examination; in another group there are changes in the muscle, but the latter retains its configuration and it appears as a heavy strand. In a third group there is injury of the degenerated sternocleidomastoid muscle during birth. These are the cases in which one finds tumor-shaped nodes in a muscle already showing degenerative changes. On

the other hand, an injury during birth of a healthy muscle not already showing degeneration, leads to a hematoma but never to a true wry neck; this injury heals in a short time.

The asymmetry of the face and skull increases in time but can be stopped by early operation. It is due not to a hemiatrophy but to the usual reaction of the bone which is inhibited by pressure in its normal growth.

### A HAPPY COMBINATION

The aim in scientific medication has always been to combine the highest degree of efficiency with the lowest degree of risk—for it is almost a truism in medicine that any drug powerful enough to do good may also, if indiscreetly used, do harm. Thanks to the research work that is so intensively carried on by our best pharmaceutical manufacturers, the element of danger is being reduced without impairing the element of efficiency; and this applies to both chemical and biological products—iodine, mercury, the salicylates, antitoxins, antigens, etc.

One of the most striking examples of this class of work is the separation of the virulence of rabic brain tissues from its antigenic activity. By the method of Dr. Cumming (dialysis) a rabies vaccine is offered by Parke, Davis & Co. which cannot possibly infect the patient with rabies, but which is claimed to be much more efficient as a prophylactic, after the bite of a mad dog, than the original Pasteur vaccine.

### GOITER SURVEY AT NORTHWESTERN UNIVERSITY

The incidence and type of goiter, the previous medication, the clinical symptoms, the basal metabolic rates, and a possible relationship of the foregoing to the academic standing, were observed by Geza de Takats and Dorothy Grey, Chicago (Journal A. M. A., March 31, 1928), in 635 undergraduate women at Northwestern University, during the school year 1926-1927. A method similar to that used by the Swiss goiter committee was adopted, with additional stress laid on the effect of medication and on the basal metabolism determinations. In 635 women, a thyroid enlargement was found in 26.5 per cent, the dominating type being the diffuse colloid goiter. The percentage of women in a group of 168 above the age of 16 with some thyroid enlargement who had taken iodine was found to be 43.4. Metabolic readings in a group of seventy-one women with thyroid enlargement showed low rates in 15.4 per cent and high rates in 2.8 per cent. A definite goiter was found in 32.2 per cent. In the absence of definite goiter, 17 per cent had abnormal metabolic rates. A correlation of academic standing with metabolic rates showed that two women with high rates had low grades. No marked difference in academic standing was found between women with normal and low rates.

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# THE JOURNAL

OF THE  
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLAHOMA, SEPTEMBER, 1928

NUMBER 9

## CANCER OF THE RECTUM; RADICAL AND PALLIATIVE OPERATIONS—CASE REPORTS\*

RAYMOND L. MURDOCH, M.D.  
OKLAHOMA CITY

Cancer of the rectum occurs more frequently in men than in women—a ratio of two to one in many series. About two-thirds of the cases occur between forty and sixty years of age. However, Pfeiffer collected forty-nine cases in children or adolescents under 21 years of age. In these the course from noticing the first symptom until death was rapid, seven to eight months. As is malignancy in other organs, so is cancer of the rectum more fulminating in the young. Tuttle said many years ago that no case of radical cure had been reported in a patient under twenty-five years of age. Lockhart-Mummery states that he has no record of any patient with carcinoma of the rectum under thirty years of age who has not died from prompt recurrence regardless of the kind of treatment. However, Hochenegg had several permanent cures in cases under thirty.

About 20 per cent of body malignancy is of the digestive tract. Various quoted 5 per cent to 10 per cent is malignancy of the rectum. Cancer of the rectum comprises well over half of intestinal malignancy. There is some evidence that the prevalence is increasing.

The carcinoma is a structure of cylindric cells which either form small tubes or fill alveoli. According to the proportion of the sustaining tissue, which may be more or less hard, the distinction of scirrhus or medullary carcinoma is made. The latter is the more malignant. Gelatinous and mucus degenerations give rise to colloid forms. Most of the malignancies of the rectum are adeno-carcinoma. Malignant growths are more or less hard and spread out between the mucous and muscular coats of the rectum so that they invade

quite an area and yet early may project very little into the rectum. Most growths with a broad infiltrating base are malignant.

The symptoms of cancer of the rectum vary according to the location in three general regions:

(1) Anal cancer (often epithelioma) is associated with pain in the early stage. Ulceration occurs with bleeding and pain lasting after defecation. It should not be mistaken for fissure, tubercular disease, condyloma, actinomycosis, or an ulcerated hemorrhoid.

(2) Cancer in the ampulla (oftenest adeno-carcinoma) may have in the early stages only a sensation of rectal discomfort or of incomplete evacuation after defecation. There may be a change in the bowel habits, which have previously been regular, periods of constipation, and later movements streaked with mucus. When ulceration occurs loose movements of mucus and blood occur frequently especially on arising in the morning. Considerable pain, loss of strength and weight, etc., are late symptoms. They should not be awaited before giving the patient the digital and proctoscopic examinations to which he is entitled.

(3) Cancer in the narrower part of the rectum in the recto-sigmoid area may constrict the bowel like a ring and the first symptoms be those of partial or even complete intestinal obstruction. The scirrhus form occurs oftenest here.

Excepting fulminating cancer in the young, and the infrequent cases in others where there is early metastasis to the liver, the spread of cancer of the rectum is slow. Jones and McKittrick's pathologist reported 68 per cent of the rectums removed by them showed no involvement of the perirectal tissues or lymph glands. Hausman of Vienna, found in 112 intestinal tumors that came to autopsy that 55 had not extended beyond the intestinal wall. Penetration of the fascia propria of the rectum by cancer and invasion of the surrounding tissues does not usually occur until lateral

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

spread has nearly encircled the rectum. It has been estimated that by the time three-quarters of the circumference of the ampulla of the rectum has been involved that the cancer has existed more than a year. In many cases the cancer is limited to the rectum and retrorectal lymph glands for a long time. Enlargement of the lymph glands beyond this is due at first to secondary infection, rather than immediate cancer metastasis.

Considering the slow spread as far as can be determined and the accessibility of the pelvic colon and rectum with adjacent tissue to removal in two stages, there should be considerable hope for the patient with cancer of the rectum. There is if his condition is diagnosed within a year and he will accept a colostomy before he becomes a bad operative risk. The more or less sentimental objections to an abdominal anus will disappear as more of them are seen.

I have taken care of the following consecutive cases of cancer of the rectum in the last year.

#### REPORT OF CASES

*Case 1:* White man, age 42, entered University Hospital June, 1927; had been constipated for two years, and since January, 1927, had dull aching pain in rectum, made worse by straining; some tenesmus. He had treatment for piles on February 1, 1927, and said he was better for a couple of weeks. Later the stools were ribbon-shaped. The pain has extended into the scrotum and patient has had to stand to void except when bowels moved simultaneously. Patient had lost weight and was too weak to work.

On entering the hospital firm nodular masses occupied all parts of the walls of the ampulla of the rectum as high as the finger could reach. The proctoscope showed small abrasions of some of the masses and a greatly congested mucous membrane throughout. The blood Wassermann was negative but potassium iodide was given, however, without improvement, while the patient was being worked out. Biopsy specimen removed from the rectum was reported adeno-carcinoma by the laboratory.

On July 8, I did the first stage of the Coffey two-stage abdomino-perineal excision of the rectum and pelvic colon. A long lower abdominal incision and palpation of the liver, colon, posterior peritoneum, and meso-sigmoid showed them to be free from

cancerous growth. Accordingly the Coffey technique was followed. The peritoneum was split down each side of the meso-sigmoid and around between the rectum and bladder in the cul-de-sac. The superior hemorrhoidal vessels were identified and sectioned between ligatures, the pelvic colon severed between clamps with the cautery, the proximal end being brought out through a stab wound in the lower left rectus for a permanent colostomy, the distal end being sutured and stitched to previously passed rectal tube, traction on which then inverted the detached pelvic colon. The fingers are pushed down by blunt dissection over the smooth fascia of the hollow of the sacrum, detaching and pushing down the retrorectal tissue. The peritoneum of the cut edges of the meso-sigmoid is sewed together forming a roof over the lower pelvic cavity and its contents. Suturing is stopped to leave passage for three large cigarette drains, the generous gauze ends of which are packed into the dissected space in hollow of sacrum, the drains coming out the lower end of the abdominal incision. The loose peritoneum of the pelvis was sutured in, encasing these drains, thus leaving the abdominal peritoneal cavity intact. Attachment of the free peritoneal edges of the colostomized gut was made to the left lateral abdominal peritoneum for the purpose of preventing subsequent possible hernia through this space.

Two weeks later excision of the rectum from below was started under caudal anaesthesia without pain until the dissection extended above the top of the prostate, when general anaesthetic became necessary. Procedure was first removal of coccyx and exposure of rectum from behind; then its removal with the sphincters, part of the levatores ani, the contents of the hollow of the sacrum and ischio-rectal spaces. The immense wound resulting was packed lightly and dressed without attempt at closure. The packing was removed in two days.

The patient walked holding to the bed on the 13th day and the wound had filled in about half, but he could not stay in sitting position with any comfort for considerably longer time. Dr. M. M. Roland directed several series of deep X-ray precautionary exposures on this man after his operation and he returned once for application of radium in the pelvic excavation as a precautionary measure. No evidence of remaining cancer has been seen

since his operation. In a recent letter this patient says he is fat and healthy now and feeling good. The sinus posterior is not entirely closed yet, but causes no trouble.

*Case 2.* Colored man, age 24. Entered the University Hospital June, 1927. About ten months before he had begun to have pain low down in the back and increasing constipation with gradual increase of straining necessary to defecate. Bowel action was blood stained. He had lost weight, become weak in the legs and for some time previous to entering had spent much of his time in bed.

He had a moderate sized, hard, fairly smooth mass, mostly posterior in the ampulla of the rectum fairly high up. Proctoscopic examination showed a protruding mass, an obstructed lumen and marked congestion of the mucous membrane, with oozing points over the mass rather than any ulceration thereof.

Due to his age, 24 years, and race, several weeks' work with Wassermanns, provocative Wassermanns, and anti-luetic therapeutic tests were done. No evidence of syphilis was found. The patient was opened for first stage of rectal excision if that should be found applicable. Routine intra-abdominal palpation detected a few nodules on the liver. I interpreted these as metastases and did only an ordinary loop colostomy. Also, he received deep X-ray therapy. He seemed to improve somewhat and went home for awhile. He returned with a big liver having umbilicated nodules palpable through the abdominal wall. He was much weakened and emaciated and died November 13, 1927. The post mortem examination showed adeno-carcinoma of the rectum with metastases to the liver and retro-peritoneal lymph glands. There was involvement of the aortic and axillary glands.

The pathologist remarked at the small size and fairly well circumscribed state of the semi-annular mass in the rectum, which was the origin of the widespread metastases and catastrophe.

*Case 3.* Colored, male, age about 44 years. Entered hospital December 28, 1927. About two months before he had first passed a little blood. Later he had aching in rectum. This became a severe pain in the lower sacral region. The blood passed was sometimes dark and sometimes bright. Has had morning diarrhea. Says in the last month he has been unable to

urinate except with bowel movement unless he stands up.

Digital and proctoscopic examination. About 2 inches up on the posterior rectum, i.e., overlying the upper coccyx and lower sacrum, the posterior rectal wall has a hard mass with central crater and everted edges. The crater admits the tips of about two fingers. The crater has dirty grayish base with bleeding areas at the edges. Hard extensions are palpated going out transversely from the mass incompletely encircling the rectum at about the level of the top of the prostate.

Patient's blood Wassermann, negative.

Intra-abdominal palpation failing to show metastases, and the patient being a fairly good risk, I did the first stage of the Coffey radical operation and two weeks later removed the rectum and adjacent tissues with five inches of pelvic colon, from below. The microscopic report on the operative specimen was adeno-carcinoma of the rectum and retro-rectal lymph glands. The pathologist commented that the cells were of active malignant type.

This patient was uncomfortable for a couple of days but turned himself for packing, etc., as necessary, after that. Through and through boric solution irrigations into the abdominal opening of the drainage tract were substituted for packing of the immense pelvic cavity. At ten days post-operative many sloughs of fascia where the cautery had been used in the second stage, were still coming away from the posterior wound, but patient said he was feeling fine. On the twelfth day he walked around the bed slowly, but could not sit down comfortably. From this time on closing of the pelvic cavity was rapid. Only a pencil size sinus remains at present. Patient has gained 20 pounds and is doing light work. He complains occasionally of a cramping pain about his colostomy, but not at all of the area of the large pelvic cavity which has practically filled in. No radiation therapy has been given this patient.

*Case 4.* White woman, age 88, referred for cancer of the rectum. The rectum was negative but a fibrous growth was attached by pedunculated base to the lower anus. It resembled the pedunculated pigmented moles sometimes seen. It was removed under local with a generous portion of its base and reported microscopically melanoblastoma. We have not learned of any trouble the patient has had from it.

*Case 5.* White man, age 50, has had "piles" off and on for many years. These were "burned out with fluid" a year before. He has been much worse in the last year, with an unusually free amount of bleeding, severe pain, frequent painful evacuations, loss of appetite, weight and strength. Blood Wassermann negative.

Digital and proctoscopic examination. Anus very tender. Hard nodular mass of irregular outline filling the ampulla of rectum. Crater-like ulceration in places with elsewhere the surface much congested and bleeds easily.

Within a few hours after entering the hospital on March 13, 1928, the patient had a massive hemorrhage from the rectum which left him with increased pulse and frequent skipped beats for several days. About a week later with regular pulse of 80 to 90 per minute, laparotomy was done. The liver was free but there was a considerable mass low in the hollow of the sacrum and a few half-pea-sized glands near the promontory of the sacrum. Taking everything into consideration I decided against the severe abdominal procedure of the first stage Coffey and did only the usual loop colostomy. About a week later a daily series of six deep X-ray exposures to the pelvis were given. Patient was up around hospital two weeks postoperative and went home praising colostomy, the means by which he was relieved of the passages over his rectal mass, which had given much pain in his case. Several weeks later he had a terrific hemorrhage, the blood flowing out abdominally from the lower limb of colostomy loop as well as from the anus. He is recuperating slowly from this now. *Query?* Is this a case in which early death is certain? Will it come sooner if nothing more is done than if posterior resection of the hemorrhaging rectal mass is attempted?

*Case 6.* White woman, age 59 years. Entered hospital April 18, 1928. For the last three months she has had a cough which apparently started with influenza at that time. Her first rectal complaint was about six weeks ago when she had to take purgative to get solid bowel action and this then came with great rectal pain and some blood in the stool. Her outstanding complaint has become severe sacral pain much of the time. She has had urinary disturbance and sometimes has to stand to start micturition.

*Examination:* A hard nodular mass completely encircles the ampulla of rec-

tum, only the tip of finger entering lumen. Palpation of the posterior vagina indicates the rectal mass extends high. Blood Wassermann, negative.

X-ray of chest reported the impression that the films have the appearance of miliary metastasis throughout both sides of the lungs. Another X-ray several weeks later confirmed the above with more definite showing of the miliary condition.

In parentheses here I might say that some time ago Dr. LeRoy Long called my attention to an article in the French medical periodical *La Presse Medicale*, February 26, 1927, in which they reported considerable relief from the pain of cancer of the rectum and cancer of the uterus by sectioning the "presacral nerve" a sympathetic branch adjacent to the fifth lumbar vertebra and the left common iliac vein. I did a total of over a dozen dissections of this. I was impressed in this woman with the severity of sacral pain complained of. Accordingly, at the time of doing left rectus colostomy on her I sectioned the presacral nerve. She had complete relief for about five days, but since then has again had sacral pain, perhaps not as severe. I do not feel like drawing any conclusions about the effect of section of the nerve from this one case; however, the French have had several favorable articles.

This patient is up in chair, but her lung condition especially, is getting worse.

*Case 7.* This last case illustrates the slower growth and lesser trouble given by cancer in older people. White man, age 76 years, entered hospital first time January, 1928, with complaint of difficult defecation, sense of heaviness and bleeding from rectum, duration two years. He is up and about doing some work every day, thinks he has lost no weight, says he feels pretty good most of the time, but takes salts to get liquid stool.

*Examination:* A hard crater-like mass 1 1-2 inches across is on the anterior rectal wall, but is slightly movable over the prostate. Part of the mass has extended into anal wall and friable edge is visible on retraction. Bands are encircling the rectum transversely.

In view of this old man's ability to work, and his freedom from obstruction or much pain, we advised him not to have any operation. He has had several series of deep X-ray treatments and says they helped him. However, within the last month he has had more bleeding than for some time.

My experience with the above has prompted me to review some of the literature and also the hospital charts of about 60 patients with cancer of the rectum in the University Hospital, Oklahoma City, since 1919, many of whom I assisted in treating.

The question is how to treat this condition. Radium has not given the good results in cancer of the rectum that it has in cancer of the cervix. Only a few cases of benefit from the use of radium have been reported and there have been many where its use seemed to make the rectal cancer and adjacent mucous membrane worse. Deep X-ray therapy undoubtedly retards the spread of cancer. I was disappointed in *Case 5* above, that even after colostomy and deep X-ray, massive hemorrhages have occurred from the rectal cancer.

Occasional cases of long survival after colostomy alone have been seen; also after suspiciously inadequate extirpation. Hochenegg treated 150 patients by colostomy alone. Seventy-two and five-tenths per cent of these died within a year, but ten per cent were living after two years, and five per cent after three years. If we do not make earlier diagnosis of cancer of the rectum, it may be that we will have to treat many of the cases with only colostomy and deep X-ray. It is to be hoped that fewer than 72.5 per cent will be dead within a year.

Extirpation operations done with hope of cure should be of a severity that results in a living patient postoperative. Colostomy has been an important advance and is indicated in all except very early growths. How much else, if anything (besides examination) should be done when the abdomen is opened? Ligation of the inferior mesenteric artery terminating in the superior hemorrhoidal artery has been done and is said to be successful when done at the "critical point", that is below the left colic, but above the sigmoidal branches so that collateral circulation will maintain the intra-abdominal sigmoid remaining. Due to the difficulty of identification and frequent possible anatomical variations, I think this is a dangerous procedure and should not be done unless the sigmoid is immediately completely severed and disposed of proximally and distally. The Robt. C. Coffey two-stage abdomino-perineal operation does this and also extirpates the upward zone of lymphatic spread of the cancer. The regret about this ingenious operation is that the very major

procedure, the abdominal one, comes first when the patient has not yet received the benefits of the functioning of his colostomy. There is much peritoneal sewing. I have followed all the steps called for by Coffey, but I know of five cases in which the sewing to obliterate the peritoneal space laterally to the left of the colostomy was omitted. No intro-abdominal hernia through this space had been reported in these cases. In view of this and wondering whether the occasional pains complained of around the colostomy in my *Case 3* might be due to the left lateral peritoneal "landscaping", I recently wrote Dr. Coffey. He replied that they were as well pleased with the complete operation as ever. He has done about 100 of the operations, the first 37 with only two operative deaths. He will have his complete statistics prepared to present at the A. M. A. meeting this year. The problem is to get a greater percentage of cancers of the rectum while they are safe operative risks for the Coffey operation or a similar wide extirpation.

It is significant, however, that Lockhart-Mummery, who formerly advocated a combined radical operation, now advocates only preliminary simple colostomy (with exploration) followed in a week or so by perineal amputation. This is the same operation as the colostomy and posterior resection of the Mayo Clinic which is the treatment given the majority of patients there. This is because patients with cancer of the rectum as they come are poor operative risks.

The multitudinous statistics from different places are not comparable. Different surgeons using the same operation submit different percentages of those coming with cancer of the rectum, to the operation. Likewise with different operations the "percentage of operability" or number to whom the operation can be safely applied, is different. Jones of Boston has reported 92 abdomino-perineal operations with 25 per cent alive at three years which equals 40 per cent of operative survivals having three-year cures. His mortality was high at the beginning of the series and satisfactorily low afterwards. The Mayos report an 8.9 per cent operative mortality for all types of resection over a ten-year period, and in one year it was only a little over 6 per cent. There were 48 per cent three-year cures and 24 per cent ten-year cures.

Personally my last year's work in a supposedly hopeless field has not been entirely discouraging. There has been no operative or immediate mortality. The patients given palliative procedures have been grateful. The patients subjected to radical extirpation have gained weight, strength and activity in a way to hope for cure, though the time is too short yet to say.

If I have been too detailed in making this report it is with the hope of making the impression that every patient of any kind approaching middle age should have a digital rectal examination and that most of them should have a proctoscopic examination.

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### SURGICAL TREATMENT OF GENERAL PURULENT PERITONITIS\*

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Formerly when we had a patient with general peritonitis we felt there would be only one result. Progress is being made in the care of these desperate cases as in many others formerly concluded fatal diseases. The opium treatment of our forefathers was of value. The more advanced care of these cases, however, I feel is far superior and productive of a smaller mortality. The surgical treatment of general peritonitis that I will briefly discuss is that following perforations of some viscus — appendix first — chiefly though what I have to say also holds good in cases of perforations of gall-bladder, stomach, rupture of pus tubes and ovarian abscess, which may produce a general peritonitis of purulent type.

It is a well known fact that in the treatment of general peritonitis it is impossible to drain the peritoneal cavity for a longer period than a few hours. One is loath to forsake old teaching and give up the method of drainage, i.e., soft rubber tube, cigarettes and rubber tissue. Some of us remember when elaborately perforated glass tubes and hard rubber tubes were used, thinking when same were placed in among

the intestines and allowed to protrude from the abdomen, all the pus would seek this tube and escape from the peritoneal cavity. Shortly after drains are placed in the abdominal cavity the peritoneum immediately begins to wall it off and as a result many firm adhesions between loops of intestines take place. These adhesions may and often do produce ileus. It then becomes expedient to do an enterostomy.

The method of procedure which Dr. R. Nowlin Holcombe, my associate, and I think advisable in handling these cases is to open the abdomen, right rectus incision. In case of appendix this structure is removed and by means of suction tube, the peritoneal cavity is, as far as possible, freed of pus and fluid—the major portion of this fluid will be found in the cul-de-sac of Douglas. The abdomen wound is now closed with two small soft rubber drains in the fat—one at either end. During the closing of the wound frequent washing of tissues with normal saline is carried out by an assistant. If the patient prior to operation has had persistent projectile vomiting and after opening the abdomen I find many adhesions between coils of intestines, I think it advisable to do an immediate enterostomy. Insert an 18 F. catheter into loop of small gut, apply a purse string suture around same and bring catheter out through a small stab wound on left side of abdomen. It is advisable to have a layer of omentum around tube and between intestines and abdominal wall. The patient is now placed in bed in Fowler's position. Large quantities of fluid—glucose and saline—are given subcutaneously and intravenously and in case of enterostomy, normal saline through the enterostomy tube. Nothing by mouth until I feel that all nausea has disappeared and peristalsis established. This state is manifested by passing of gas by rectum and through enterostomy tube and absence of nausea. Should vomiting persist I resort to Rehfuß tube leaving same in situ until vomiting ceases. This tube may be brought out through nose or mouth. Should necrotic tissue be present around appendix stump a soft rubber drain should be used.

Following this method one may encounter breaking down of abdominal wound—abscess formation between loops of intestines or abscess in Douglas cul-de-sac. It is advisable to make frequent examinations of the abdomen and rectum to determine if abscess is forming. It manifests itself by increase in temperature and by the for-

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

mation of tender mass in abdomen if collection of pus takes place in coils of intestines. Should such collection take place in Douglas cul-de-sac there will be a bulging and tenderness along anterior rectal wall. Both types of abscess may require opening, the former through the abdominal wall, the latter by puncture through anterior wall of the rectum. On the other hand these collections of pus may be absorbed. In 27 per cent of the cases reported by Drs. Nathan and Ochner from the Zurich Clinics, in which examinations of the peritoneal exudate were made, it was found sterile. In females it is sometimes advisable to evacuate the pus through the vagina.

#### ENTEROSTOMY

In experiments of Drs. Orr and Haden of Kansas City, they found the chemical changes of the blood characteristic of acute obstruction of the jejunum in dogs are not preventable by jejunostomy. It is generally conceded that peritonitis *per se* does not produce death, but paralysis of the intestines causes fatal issues. And if this portion of paralyzed intestine is drained the patient will often times overcome the ileus and recover. It has not been my plan to use the high jejunostomy, but rather some portion of the ileum. Adhesions and ileus are more often encountered in lower portion of small intestine. Enterostomy is not a necessary procedure in all cases, but it will be found a necessary procedure in most of the cases of general peritonitis following ruptured appendix and there will be less shock to the patient if done at the time of removal of the appendix.

You, of course, realize as well as myself, that no treatment will produce one hundred per cent of cures in general peritonitis, but I am thoroughly convinced and satisfied that the above described procedure in my experience has markedly reduced the mortality in this disease.

#### THE RELATIONSHIP OF DERMATOLOGY TO INTERNAL MEDICINE\*

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Dermatology is one of the youngest of the specialties in medicine, and one which is bathed in mystery to most physicians,

owing to the ponderousness of the nomenclature and the vast size of the existing text books. Early dermatology was a purely morphologic field, and one, therefore, of little interest to any except its own devotees. In the past twenty years this branch of medicine has been emerging from this stage into a field much interested in biology, chemistry and physics. The next twenty years will probably see the completion of the establishment of the interrelationship of dermatology with the other branches of medical science. The name dermatology may disappear and that of cutaneous medicine replace it. The teaching of dermatology, as forecast by Stokes, will be much simplified, and the text books for students much reduced in size. Wile recently said, "Apart from the parasitic diseases, the few essential dermatoses, and the benign and malignant neoplasms peculiar to the skin, dermatology, according to the modern conception, concerns itself with the aspect of the skin as a great organ which admirably reflects morbid processes elsewhere in the body in a great variety of ways." If this is true, the relationship of dermatology to internal medicine is established, and the presentation of this paper to a body of internists justified.

The internal disorders which are being given the most attention by dermatologists at this time are:

1. Disorders of Metabolism.
2. Allergy.
3. Organic or Functional Diseases of Internal Organs.
4. Focal Infection.
5. Endocrine Dysfunction.
6. Diseases of the Nervous System.

It will be the aim of this essay to briefly review the work that has been done in recent years along these lines, from the dermatological viewpoint.

#### 1. Disorders of Metabolism.

In diabetes mellitus the following skin complications are commonly present: Pruritus, eczema, perforating ulcer, furuncles, carbuncles and xanthoma diabeticorum. Greenwood<sup>1</sup> examined five hundred of Joslin's diabetics and found the incidence of skin disease in diabetics much greater than in non-diabetics. It has commonly been assumed that the hyperglycemia is responsible for these complications and acting on this hint McGlasson, Haldin-Davis, Ayres and others have found a hyperglycemia without glycosuria, or at least an impaired carbohydrate tolerance in

\*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

several cutaneous disorders, particularly in eczema and seborrheic dermatitis, and that many of these improved with reduction of the blood sugar. Thus not only is diabetes mellitus productive of skin complication, but a possible pre-diabetic state may be brought to light by the investigation of an eczema or a pruritus of obscure etiology. In the past three years I have had five diabetic women consult me whose only complaint was intolerable vulvar itching.

Schamberg and Brown<sup>2</sup> from an examination of over two hundred cases of eczema and pruritus found that 44 per cent had an increase in uric acid content of the blood, and that many of these patients, when suitable changes were made in their diets, were much more rapidly amenable to treatment than had been the case in patients previously treated without dietary restrictions.

Hypercholesterolemia is always present in xanthoma tuberosum, and frequently present in xanthoma diabeticorum.

Perversion of the metabolism of the inorganic salts, particularly of the calcium salts, may play an important role in the causation of eczema and dermatitis, a lowered calcium content of the blood apparently rendering the skin more sensitive to the application of external irritants, as evidenced by the experimental work of Klander and Brown<sup>3</sup>.

## 2. Allergy:

The recent studies on allergy and sensitization have opened up a fertile field for investigation which may lead to the clarification of the etiology of a number of dermatoses. At this time urticaria and angioneurotic edema offer the best examples of allergic dermatoses. In a large percentage of these cases positive cutaneous tests may be obtained, and the majority respond favorably upon withdrawal of the offending protein. Neurodermitis may also be an allergic disease. In regard to eczema and allergy, the situation is in an unsatisfactory state. That allergy plays a role in the etiology of some eczemas cannot be denied. Certainly in those eczemic patients who give a history of associated hay fever, asthma or urticaria it would seem highly probable. To those it is perfectly proper to apply the sensitization tests. To all others it would seem best to look elsewhere for the causative factors before submitting the patient to a hundred cutaneous tests. A disappointing feature of these tests is that when one does

obtain a positive reaction removal of the offending agent so seldom cures the eczema.

## 3. Organic or Functional Diseases of the Internal Organs:

Rulison<sup>4</sup> made complete gastro-intestinal examinations on fifty cases of Rosacea. He confirmed the work of Brown, and that of Ryle and Barber in finding that 70 per cent of his cases presented a gastric sub-acidity, about 14 per cent having achlorhydria. All of these cases presented enough other gastro-intestinal findings to suggest that here lies the cause of this disease. The addition of dilute hydrochloric acid to the therapeutics of this disease is a welcome one.

## 4. Focal Infections:

The role assumed by focal infections in producing skin diseases will probably be much enlarged in the future. There is evidence of cases of urticaria, erythema multiforme, erythema nodosum, furunculosis, lupus erythematosus which have recovered when an abscessed tooth or diseased tonsils were removed.

Perhaps the most startling claim to be made recently along this line is the evidence presented in support of the claim that such diverse diseases as lupus erythematosus and alopecia areata are caused by tonsillar or other focal infection with the streptococcus longus. This work has not been confirmed.

## 5. Endocrine Dysfunction:

It is undoubtedly true that disturbances of the internal secretions play an important part in many diseases of the skin, but our knowledge of the internal secretions is so incomplete that when it is applied to dermatoses a field of speculation is at once entered. It has been suggested that Scleroderma and Recklinghausens' disease are of endocrine origin. Certain cases of Ichthyosis are much benefited by thyroid therapy. Recently reports of the relief of psoriasis by irradiation of the thymus gland are suggestive. Diseases of the adrenals, as is well known, are characterized by pigmentary changes in the skin, but it is not certain that these are due to disturbances of secretion, as similar pigmentary changes are sometimes produced by tumors in other structures in the abdomen and pelvis.

## 6. Diseases of the Nervous System:

In many instances of cutaneous disease nervous system pathology is the direct

cause, as in the trophic ulcers, gangrene, urticarias and erythemas of tabes dorsalis, or in the vesiculation of Herpes Zoster. But in many more cases the role of the nervous system is an indirect one, acting perhaps as the means through which toxic or other underlying disturbances affect the skin.

The experiments of Gruss<sup>5</sup> are interesting in pointing out the role played by the vegetative nervous system in the production of dermatoses. At 24 hour intervals he made intravenous injections of adrenalin, atropine and pilocarpine in patients with various skin diseases. His urticarias evidenced a vagatonía. In the psoriasis there was no evidence of either vagatonía or sympatheticonía.

Emotional disturbances have some influence in certain dermatoses mental stress seems to be a factor in many cases of lichen planus and dermatitis herpetiformis.

I think it worthy of comment that at the present day a dermatologist must also be something of an internist.

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### SOME PRACTICAL CONSIDERATION OF THE COMMON SKIN DISEASES IN INFANCY AND CHILDHOOD\*

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Cutaneous diseases of infancy and childhood in many instances, in fact the majority, have the same identical features as those seen in adults; however, many are common only to childhood as those seen in the congenital disorders and to those liable to occur during these periods. Regarding age as an etiological factor in dermatology Stelwagon<sup>1</sup> says, "Infancy, youthful development, mature growth, and old age have their cutaneous vulnerabilities." To quote Engman<sup>2</sup>, "Dermatology—its lesions though on the surface of the body are symbols which speak of deeper things, often of life's most obstinate and hidden problems;

lesions significant often of trades, occupations, habits, customs, types, races, families, diseases lying deep in the system, disposition, vanities, frivolities, physiologic period; even flitting thought often leaves its impression as a blush or lesion."

The congenital new growths present an interesting group of dermatoses and the most frequent of this group occurring in infancy and childhood is the angiomas or nevus vasculosus. These are congenital vascular new growths of the corium or subcutaneous tissue and are by far the most common new growths seen in early life.

Clinically, three forms are recognized according to the depth of the pathological process.

1. Port wine marks or stains most commonly seen on the face and neck are composed of superficial capillary plexus.

2. Nevus vasculosus or strawberry mark occurring most frequently on the face as a red elevated lesion; these also involve the superficial vessels but to a greater extent than the port wine type. As a rule they are present at birth or occur shortly after birth and may grow rapidly in size.

3. Angioma cavernosum is the deep seated type of angioma involving the deeper vessels, especially the veins producing a mesh work of communicating vascular spaces. This type of angioma occurs most frequently on the face and at times may involve the greater portion of the face, also at times seen on the tongue, mucous surface of the cheek and even the labia. Radium is the choice of election for treatment in these conditions. In the strawberry mark type a half strength applicator screened with one-tenth m.m. of aluminum for a period of fifteen to twenty minutes repeated at intervals of four to six weeks pending entirely upon evidence of reaction and retrogression of the growth. For the deep seated variety the gamma rays are preferable. A tubular applicator of twenty-five milligrams of radium screened with one m.m. of brass and five-tenths m.m. silver and three m.m. rubber at a distance of one inch for two hours. If no reaction and no retrogression of the tumor a larger dose may be given after a period of four to six weeks. In addition to radiation there are other methods which give satisfactory results as carbon dioxide snow, injection of boiling water, electrolysis and the Kromayer lamp.

\*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

Nevus pigmentosa or mole is a congenital lesion of the skin present at birth or occurring shortly after, seldom giving rise to any trouble during infancy and childhood, however, they are potentially a dangerous affection when treated and if treated they should be treated radically. Excision or destruction by electrolysis being the method of choice.

Of the infectious diseases caused by the cocci, impetigo contagiosa is one of the most common. It occurs in infancy and childhood and when occurring in infancy it is of considerable importance as the mortality is rather high. This type is usually called pemphigus neonotorum. The vesicle situated upon an erythematous base, containing clear fluid at first, later becoming purulent, followed by drying and crusting is common to all; as a rule easily recognized but often resistant to routine treatment. The success of treatment depends upon the accurate method of applying the medicant to each individual lesion. The nurse or mother should be instructed as to the nature of the spreading of the individual lesions, as it is through the peripheral undermining of the epidermis resulting in a curling up of the ruptured vesicle wall which encloses many of the micro-organisms. The ointment of 10 per cent xeroform or 5 per cent ammoniated mercury should be applied by dipping a cotton applicator in the ointment and then brushing each individual lesion from the center outward, as in the spoke of a wheel, until the curled up vesicle wall has been brushed back. In infants and young children the application of a 5 per cent silver nitrate in spirits nitrous ether will work admirably. It is quite painful and therefore is not as readily adapted for use in older children.

In infancy and childhood one occasionally encounters a persistent case of furunculosis which fails to respond to the ordinary treatment. Castellani<sup>8</sup> has recently pointed out that some cases of persistent furunculosis, indistinguishable clinically from the ordinary pyogenic infections are of mycotic origin, and to this class of skin infections he gives the term furunculosis blastomycetica or cryptococcica. At least some of the persistent cases should arouse suspicion that they might be mycotic in origin rather than pyogenic.

The invasion of the skin by the tubercle bacillus is not a common manifestation of tuberculosis when compared to the prevalence of infections of other organs and tissues of the body. The manifestations

of tuberculosis in the skin have been attributed to the local action of the bacilli in the lesions and to the action of the toxins liberated at a foci distant from the skin. To the latter the name tuberculide have been given; however, at the present time, there is a tendency to consider the tuberculides as a true tuberculosis of the skin. Lupus vulgaris is the common type of tuberculosis of the skin, although rare, it is essentially a disease of childhood but in the majority of the cases, through its chronicity persists until adult life. The characteristic apple jelly nodule leads to an early diagnosis of this affection. The tuberculides as acnities, papulo-necrotic tuberculide, lichen scrofulosorum and acne scrofulosorum all have distinguishing characteristics and as a rule are readily recognized, particularly when a tubercular foci is demonstrated. Lupus vulgaris is best treated by the Kromayer lamp along with general management. The tuberculides are treated along general lines with special procedures when indicated. High vitamin feeding is of considerable value in the treatment of these conditions.

Syphilis presents a very interesting and important subject to us all and time will not permit me to enter into any lengthy discussion of this ever prevalent disease. Its recognition in infancy and childhood is extremely important, but the prevention of the heredo-syphilitic is by far the more logical method of successfully managing this prevalent disease. At the present state of our medical organization we are unable to cope with the many medical social difficulties that this disease imposes, but we should be alert at all times to suspect syphilis, because the suspicious will prevent many cases of heredo-syphilis. Prevention rather than a cure is by far more logical in the management of this disease. Prenatal antiluetic treatment in those infected and above all well systematized antiluetic treatment to the luetics and their social adjustment. The cutaneous manifestations of heredo-syphilis have the same general characteristics as those seen in the adult, but in addition predominance of certain types and stigmata. The classification of Stokes<sup>4</sup> to include all cases which have as their origin of their infection via the placenta and maternal fetal blood streams as heredo-syphilis, and congenital syphilis to include all cases which are infected in the passage through the birth canals is certainly a logical one. The outstanding dermatological feature of the infantile syphiloderm is the tendency for

the involvement of the chin, circumoral region, the palms, soles and anogenital regions. Any eruption which affects these sites at any one time is likely to be luetic. The differentiation of the various dermatoses occurring in the ano-genital region is important. Confusion at times with the diaper eruption but the lack of induration grouping and configuration will usually be sufficient for differentiation. Hacking and rhagades are sometimes confused with the eczematous fissures from secondary infections around the mouth. Impetiginous and pemphigoid eruptions are distinguished by being more extensively distributed and appearing in healthy children. The stigmata of the later heredo-syphilitic are readily recognized as interstitial keratitis, Hutchinson incisors, saber tibia, saddle nose and enlarged spleen. The treatment of the heredo-syphilitic and congenital syphilitic follow the general plan used in treating adults. The same drugs, varying the dosage, depending upon the age and weight of the infant and child. The most important point regarding treatment is to prevent the transmission of syphilis by intensive prenatal treatment and to treat all syphilitics systematically and energetically, especially all early syphilis.

The cutaneous diseases caused by vegetable parasites present an interesting group of diseases. The ring worm infections of the scalp with the large and small spore types of ring worms are easily recognized if one finds an area of partial alopecia in which broken off stumps of hair occur which are easily epilated. If any doubt as to a diagnosis a few epilated stumps will disclose the trichophyton when prepared with a 20 per cent potassium hydroxide solution and examined microscopically. Treatment is usually efficacious with sulphur and salicylic acid. Occasionally epilation with the X-ray or thallium acetate as recently advocated by Feldens, the latter can only be used in children before the age of puberty.

Scabies at times is even confusing to the trained eye, but if the distribution rather than the individual lesion is remembered less confusion will be likely to occur. The sites of predilection for the galleries are the webs of the fingers, anterior surface of the wrist, posterior surface of the elbows, anterior axilla, lower half of the buttocks, breasts in the female and the penis in the male. Sulphur is specific but many recurrences are due to reinfection from improperly sterilized linens and clothing. The

proper sterilization of the latter is of equal importance as the prescribing of sulphur.

The other common parasitic infections of the skin as pediculosis corporis and pubis have distinguishing features readily recognized and which seldom give rise to any difficulty.

Many substantial animal, vegetable and mineral are capable of producing a dermatitis when coming in contact with the skin. Drugs frequently produce a generalized or local dermatitis, as in the bromide eruptions and various multiform types following many other drugs. The history of medication and the character of the eruption, usually simulating some other skin disease, serves sufficiently for differentiation.

Of the many dermatoses of unknown etiology there are a considerable number belonging to this group, of which psoriasis, urticaria, pityriasis rosea and eczema are the most common. Psoriasis seldom gives rise to difficulty in diagnosis, but treatment still permits one to exercise his therapeutic skill. At times very promising results, again very discouraging. Urticaria as seen in infancy and childhood differs in many respects from the same condition in adults and is designated as lichen urticatus, papular urticaria or strophulus infantum. The primary lesion is an erythematous papule, at times covered with a crust or even a vesicle on the summit of the papule. The papule is subjected to many variations, and on account of its extreme pruritic nature many secondary manifestations are present. The lesions of this disorder are prone to appear during the night and during the course of their evolution are intensely pruritic. Differentiation between scabies and prurigo is readily made if the characteristic wheal like papule is seen associated with intense itching. The consensus of opinion regarding the etiology of urticaria points to a sensitization of internal origin. Treatment depends upon the removal of the exciting agent when possible, along with antipruritic preparations and general management. Pityriasis rosea is of importance because of its confusion with syphilis, ring worm, psoriasis, and seborrheic dermatitis. It is differentiated by the presence of a primary patch followed by a secondary eruption, which is composed of round, oval and circinate plaques with a fine cigarette paper like scale and being most frequently distributed on the trunk. Eczema or preferably infantile dermatitis, as eczema is grad-

ually becoming obsolete in dermatological terminology, is a very common skin disease of infancy and childhood. Protean in its clinical manifestation and varied in its etiology. The various types such as vesicular, pustular, erythematous, papular and crusted all have essential features in common. Various theories have been advanced as the cause of eczema; the toxic theory, the neurotic theory, bacteria and food sensitization. The latter is perhaps responsible for a large percentage of cases as it has been demonstrated that individuals are sensitive to various proteins, carbohydrates and fat. Fisher<sup>6</sup> thinks that there is an association between gastric and gastro-intestinal derangements and eczema in infants, as acute eczema may follow over-feeding with fats and carbohydrates. White<sup>7</sup> demonstrated an excess of fat and carbohydrate in the stools of patients having eczema. Talbot and Towle<sup>8</sup> demonstrated an incomplete digestion of fat and carbohydrates. Burgess<sup>9</sup> demonstrated that 16.6 per cent of 109 consecutive cases of eczema gave a positive reaction to skin tests to one or more irritants of endogenous origin. O'Keefe has shown that the infant may give a positive skin test and the mother a negative one. Unaltered proteins circulating in the blood, especially from gastro-intestinal disturbances are responsible for a certain number of infantile dermatitis cases. Eczema is an interesting disease, particularly from an etiological view point, but the more one sees and learns of the role that sensitization plays as an etiological factor in these cases the more one is convinced that the majority of these dermatitis cases are in reality sensitization phenomena. Some faulty metabolism of the fats, carbohydrates and protein is capable of inducing into the blood stream a substance which produces an irritation of the skin resulting in a dermatitis. The question, why does the cell become sensitized has not been answered, perhaps trauma is a factor in its production. The successful management of these cases will depend entirely upon the general plan of combined treatment; that is, general and local measures. If the sensitizing substance can be identified or the character altered marvelous results are obtained, but these cases at the present time are in the minority. Many cases fail to respond to carefully planned and judiciously systematized plans of both pediatrician and dermatologist.

Errors in the diet should be corrected, particularly the over-fed infant should

have the amount of food reduced and, if possible, placed upon a mixed diet. Reduction of certain excessive constituents in the diet when present will be influential in many cases. Protection against winds, excessive sunlight, avoidance of strong soap and excessive water will be of assistance in managing certain percentage of these cases. The local treatment during the acute stage requires mild, soothing applications as the calamine zinc oxide lotion or the shuttle mixture. Occasionally a salve containing 25 per cent zinc oxide and starch in white vaseline applied locally three times a day will give good results. In addition to the above formula a 10 per cent naftalan may be added. Nelsen and Osterberg<sup>11</sup> have recently produced a distillate of crude coal tar which is combined with zinc oxide and starch in a petrolatum base and is a very efficient preparation. The action is that of the crude coal tar but many of the objectionable disadvantages of the crude coal tar are dispensed with. Other stimulating and astringent preparations will give good results. One important point is to have the preparation in constant contact with the skin and this is best obtained in infants and young children by the use of the muslin or linen mask. In those cases where the sensitizing agent is determined, desensitization is the method of approach. Occasionally sub-fractional radiation will clear up a persistent dermatitis.

The common hypertrophic conditions of the skin seen in childhood, the common wart and the warts seen on the palms and soles are perhaps the most common. The former seldom give rise to any difficulty except their appearance but the latter are a source of great discomfort to the patient and very resistant to the ordinary method of treatment. Radium and X-ray is the method of treating the latter.

In conclusion, I have omitted many comparatively common dermatoses because time would not permit even a brief mentioning of some of their chief characteristics. I selected those which are of every day occurrence in the majority of instances and which are problems even to the specialist and which are of extreme importance both as regards their recognition and to their successful management.

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## CONGENITAL PYLORIC STENOSIS WITH SPECIAL REFERENCE TO SURGICAL TREATMENT\*

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Pyloric stenosis in infants is a condition that is frequently met by the general practitioner, and unless he is expert in recognizing the symptomatology and sufficiently familiar to see that he is dealing with a case of pyloric stenosis, the results of deferring surgical treatment until too late is often disastrous to your little patient.

In order to treat these cases with success it is very necessary to make your diagnosis early, for the future of your patient depends largely upon an early diagnosis and then it is just as necessary to operate, when operation is indicated, by some simple and rapid method.

The etiology of pyloric stenosis in infants is still an unsettled question. The condition has been ascribed to hypertrophy of the pylorus, to congenital malformation, to hyperplasia of inflammatory nature, or to spasm of the pylorus alone.

The problem of etiology has, perhaps been best elucidated by Strauss and others who think the condition begins in fetal life, as pyloric stenosis has been found in fetuses and also in the new-born and for the further reason that in a majority of cases on record the size of the pyloric tumor was absolutely proportional to the age of the child or infant.

The condition probably begins during fetal development of the stomach, and to my mind is brought about by rhythmic contractions of the pylorus due to some abnormal stimulation from the extrinsic or intrinsic nerves of the stomach.

In view of the unsettled state of the etiology, our treatment, whether medical or surgical, should be the same; but whatever be the true cause, our line of duty is to see that the food passes from the stomach to the intestine and prevent the death of our patient from starvation.

Usually there is a tumor at the pylorus, though many good men do not consider that the presence of a tumor is essential to make a diagnosis. Downes (prior to 1924), on the basis of some 200 cases, states that the pre-operative diagnosis of a pyloric tumor was only proved incorrect twice.

Ladd, and others, including Levy, think that often in serious cases a tumor can not be palpated.

Gray, Thompson and others are of the opinion that the presence of a tumor is pathognomonic.

Helle says that a tumor may be absent at operation in the very cases in which pre-operative it was most distinct.

It is possible that these varying opinions may be reconciled by adopting the view of Strauss, that pylorospasm and pyloric stenosis are different stages of the same process.

Where a tumor actually exists it may persist long after other symptoms have disappeared, as it has been commonly observed that after a gastroenterostomy the food continues to pass through the new opening instead of through the pylorus. The result is, however, entirely different after the pylorus is split as in the Rammstedt operation.

Holt and others have reported a number of cases in which the patients died at intervals of from six months to two years after a Rammstedt operation and in which the tumor had entirely disappeared.

Woolstein studied prior to 1924, 22 cases which had died within from twenty-four hours to two years after a Fredet-Rammstedt operation and found a complete recovery after this operation, and that recurrence was impossible.

Radioscopic examination of the stomach and pylorus is very necessary in making a diagnosis in these cases.

Downes states that since a correct diagnosis can be made in 90 per cent of the cases on the clinical findings, that it is not necessary to resort to the X-ray.

Strauss believes that the fluroscope is the most important means of reaching an accurate diagnosis, and that it also indicates the treatment.

\*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

Whether a given case is amenable to medical treatment, or demands surgical treatment depends upon the percentage of a bismuth milk meal which passes through the pylorus in a given time, say 3 or 4 hours.

In my own cases and cases that I have been associated with, I have the following rule or criterion.

When there is even a palpable tumor, if loss of weight is not rapid and the general state and conditions good it is judged best that non-operative methods should be tried; but if loss of weight is rapid and vomiting is persistent the child should be operated at once.

Thorek, Goldbloom and Spence, prior to 1924, showed that the mortality after the Rammstedt operation was almost six times as great in babies that had lost 20 per cent or more of weight, than in those that had lost less than 20 per cent in weight. Hence, operation is indicated if the loss is more than 20 per cent of the best weight.

Medical treatment has been advised in this condition on the ground that many of the cases are purely of spasmodic type.

If we adopt Strauss' view that spasm and stenosis are only different stages, then there is no such condition as a purely spasmodic pyloric congenital occlusion, the indication for medical treatment fails, and the therapeutics become entirely surgical.

The simplicity of the Fredet-Rammstedt procedure and the immediate relief it affords are other reasons why the operative treatment should always be that of choice in the pyloric stenosis of infants.

The tender age of the patient and their slight resistance makes it imperative that the surgical method be rapid and offer the least amount of shock and trauma.

Our aim should be to afford relief with the minimum amount of surgery.

Gastroenterostomy is too formidable an operation and should be at once ruled out.

In 1907 Fredet executed his first operation of severing the muscular ring of the pylorus leaving the mucosa intact. His results were published in 1910. This operation was perfected in 1912 by Rammstedt, and is now known as the Fredet-Rammstedt operation. It consists in dividing the hypertrophied muscle coat in the axis of the pyloric canal, the mucous membrane being left intact, and using no sutures to close the gap.

Only a small incision is necessary, as the pylorus and its adjacent parts alone need be brought out of the wound. Some think that the incision is best made in the middle line for about one and a half inches commencing from the ensiform cartilage as hemorrhage is then best avoided.

The pyloric muscle is split along the anterior face, taking care to avoid the branches of the pylorus and right gastro-epiploic vessels. The surgery must be as rapid and systematic as possible, and these little patients demand the greatest attention to operative details and conditions of surroundings.

With regard to the prognosis of pyloric stenosis of infants, Ernberg & Hamilton report 57 cases treated medically with 3.5 per cent mortality; Thorek, Strauss and others have shown that the mortality depends upon the loss of weight, that if the loss is 20 per cent or more the mortality runs very high. Goldbloom and Spence report that in the babies' hospital, New York, there were 163 Rammstedt operations prior to 1924. In those infants who had lost less than 20 per cent of their weight the mortality was 6.58 per cent and in those cases where the loss of weight was 20 per cent or more the mortality was 37.35 per cent.

Thorek of Chicago, has made a modification of the Rammstedt operation. He makes incision to right of the median line commencing at the right costal margin and proceeding downward and terminating on a level with the umbilicus.

The pylorus is lifted out of the wound and the serosa and muscularis divided down to the mucosa. He then takes a pair of curved scissors and cuts a longitudinal wedge of the thickened muscularis carefully avoiding hemorrhage. (It is very important to see that you have no hemorrhage as you always find these patients in a weakened condition). The gap in the muscle and the operative wound is left open. I do not think that a local anesthetic should be used as children take ether very well, even better than adults.

In 1926 I delivered a baby girl in which I diagnosed pyloric stenosis and came to the conclusion that this was a case where medical treatment should be instituted and referred the case to Dr. G. Garabedian of Tulsa, and I am glad to state to you that the baby recovered and is today a very healthy child.

In the month of October, 1926, I operated a girl baby three and one-half months old that died within a few hours after operation.

In February, 1927, I had a very pronounced case of pyloric stenosis in a girl baby four months old, which was operated with good results.

In conclusion I wish to say that my limited experience and training has taught me that the most important thing is an early diagnosis and institution of immediate treatment, whether it be medical or surgical.

In 1924, while in Chicago during the months of September and October, I was associated with Dr. Thorek in some 12 or 15 cases, where the diagnosis was made early, and all operated early with no fatalities.

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#### THE INTRAPERITONEAL USE OF CITRATED BLOOD IN THE TREATMENT OF BRONCHO-PNEUMONIA\*

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C. W. ARRENDELL, M.D.  
PONCA CITY

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In considering the treatment of broncho-pneumonia in infancy and childhood it must be admitted that there are many shortcomings. Not the least of these is the mortality which is exceedingly too high, especially in infants; and this fact prompts me to make the assertion that if infants were fed in diets that fulfilled all the requirements and were given an abundance of fresh air and sunshine without clothing, there would be much less broncho-pneumonia. Observation also leads me to believe that the development of the heat regulating mechanism by increasing exposures to outdoor air every day in the year is second only in importance as a procedure in increasing resistance against infections as the ultraviolet rays of the sun. Therefore, while the results obtained by lamps producing the ultraviolet rays are nothing short of phenomenal in selected cases, the natural sunshine with outdoor air is to be recommended. Of course, in some places and in some seasons there is such a small amount of sunshine available, that it becomes more practical to use artificial measures at hand.

In order to develop a more successful method for the treatment of broncho-pneu-

monia it may be necessary to obtain a different conception of the causes and effects of the diseases in all its phases. Broncho-pneumonia is an infection of the respiratory tract including the bronchioles and alveoli that causes a systemic reaction that is similar to any other infection of the same extent of area and virulence. The signs and symptoms exhibited depend almost entirely on the systemic reaction and not on the pathology in the respiratory tract itself. In fatal cases an invariable train of signs and symptoms follow that is very similar, if not the same, as in any other infection, the end picture of which is emaciation, followed by circulatory failure and general collapse. Rapid and continuous loss of weight is a most important index of an unfavorable prognosis; conversely, to supply an infant or child with enough fluids and food to prevent weight loss makes for a more favorable outcome. The fluid and food requirement of the sick infant is greater than the requirement of the normal infant, but since the intake is nearly always less than the normal, loss of weight is a natural sequence. Continuous loss of weight is often preventable even in the very sick infant, and when such preventive measures are used a remarkable improvement of other unfavorable signs and symptoms ensues. Of course, it may be impossible to repair cells already too greatly damaged, or there may be such a preponderance of bacterial toxins that, under any conditions, immunity cannot be established. It is in such cases that a specific antitoxin is needed. Until this is found, we must necessarily concentrate our efforts on preventing or relieving the effects of limited intake of food and water.

When due attention is thus paid to the correlation of loss of weight with the undesirable signs and symptoms of broncho-pneumonia, and measures taken to prevent and relieve weight loss, then the whole perspective of treatment is changed and it is found that many of the "routines" are harmful or at least unnecessary. The necessary measures include only the regular diet at the regular feeding interval as far as possible, and a restful environment with an abundance of fresh air and sunshine if available. In babies with more marked signs and symptoms of rickets the maximum dose of cod liver oil is given daily. Small doses of opiates are often quite useful, especially if cough is severe and frequent. Above all, the patient's bed should be smooth and clean, with light cov-

\*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

ering, and the room should be bright, cheerful, and well ventilated.

As has been said by Marriott, I wish to emphasize that the most important thing to be done in combating any infection is the giving of large quantities of water. Rarely will an infant take enough water by mouth to maintain a normal water balance, but if water enough is given by other means there will be no weight loss. Consequently, when a pound or two of weight is lost then one or two pints of normal saline or Ringer's solution are given intraperitoneally. About the only symptom that will stand in the way of this procedure is tympanites. When necessary, this may be relieved by light abdominal massage, rectal flushing or perhaps pituitrin. Purgatives act too slowly and only accentuate the distension later. By repeating the intraperitoneal injection every twelve or twenty-four hours, depending on the amount of weight lost, the ability of the patient to take more food and water by mouth will be enhanced, unless the infection is unusually virulent. Finally, however, in some cases, it is found impractical to give intraperitoneal injections so often and over so long a period of time, or it is found that in spite of giving the maximum amount of fluids intraperitoneally, weight loss still continues; then it is that the use of citrated whole blood given either intravenously or intraperitoneally becomes such a valuable procedure. The intravenous method is preferred, though the intraperitoneal route offers no particular objections and the technique of administration is much easier. Immediately the pallor will disappear; or if cyanosis was present, it will improve, prostration is lessened, and other signs and symptoms of approaching collapse change to express a more hopeful outcome. In some cases the results are so phenomenal that one wonders if the blood given did not contain a specific antitoxin as the improvement is comparable to that seen after the administration of diphtheria antitoxin.

The technique of administration of blood by the citrate method should be made very simple. When it is decided to give the patient blood, a prospective donor is selected and the blood is drawn from both patient and donor for the purpose of matching. It is not necessary for the donor to be previously typed. The requirements of a suitable donor are fulfilled when the cells of the donor mixed with the serum of the patient, and the cells of the patient mixed

with the serum of the donor do not show clumping or hemolysis. In collecting the blood for matching, about two cc. are withdrawn and placed in a small tube to facilitate the removal of the serum. Also, one or two drops of blood are placed in one or two cc. of normal saline or Ringer's solution and shaken up well to make a red cell suspension. Then one drop of the patient's serum is placed on a slide with a drop of cell suspension from the donor and another slide is prepared with the donor's serum and the patient's cell suspension in like manner. The two slides are watched for twenty minutes, at which time the final result is determined.

When a suitable donor is chosen, the amount of blood to be used should be determined and then withdrawn. Citrated blood can be kept on ice safely for several days if necessary. The amount given varies as to the size of the infant and the exigencies of the case. Usually from 200 to 400 cc. are used.

The apparatus used in withdrawing the blood consists of a 500 cc. Erhlemeyer flask on which has been placed marks showing the various levels of capacity. This flask is fitted with a rubber stopper containing two holes through which are inserted two glass tubes each 4 inches in length. A rubber tube, preferably 3-16 inch in size, is connected at the outer end of each of the glass tubes. At the distal end of one tube which should be 2 or 3 feet in length, is placed the needle that is to be inserted into the donor's vein. The end of the other rubber tube is to be placed in the mouth of the assistant who is holding the flask. The needle used is a transfusion needle of 15 gauge caliber. Ten cc. of a 3 per cent sodium citrate solution for each 90 cc. of blood intended to be withdrawn are placed in the flask. It is best to prepare a fresh solution of sodium citrate each time blood is withdrawn. The donor should lie down on a table and be made comfortable, and the arm to be used extended on a small stand beside, and on a level with the table. A tourniquet should be applied firmly, the skin disinfected with alcohol and the needle inserted into the most suitable vein at the bend of the elbow. At first the blood flows rapidly, but unless the tourniquet is loosened a little the rate of flow will diminish. At this time by having the assistant suck on the end of the other tube, negative pressure is produced in the flask, which facilitates the easy flow of blood. As the blood flows, the flask is shaken gently, to allow

mixing with the citrate solution. When the desired amount of blood has run into the flask the needle is withdrawn from the arm.

The infant or child is now ready to receive the blood. This procedure can be done on the bed, or better, on a treatment table. Any suitable method of restraining the child's arms and legs is provided. The abdomen is bared and disinfected with **alcohol**. The citrated blood is strained through 6 or 8 layers of sterile gauze placed in a glass funnel into a 300 cc. glass cylinder. An 18 gauge needle 2 1-2 inches in length is inserted into a rubber tube, which should be about 4 feet in length, leading from the cylinder. After the blood is all placed in the cylinder, the air is entirely displaced by the blood in the tube, and the needle inserted through the abdominal wall at a point mid-way from the umbilicus and symphysis pubis. The blood is allowed to run into the abdominal cavity at a moderate rate of speed. If favorable results are to be obtained they will become evident in a few hours. Later it will be noticed that the decline in weight does not progress so rapidly. The infant becomes brighter, color improves a great deal and the appetite usually becomes much better. There should be no unfavorable symptoms unless the blood has not been well matched, although the patient may be sensitive to the donor's serum. This may be evidenced by a chill and rise in temperature.

Summarizing briefly: The mortality of broncho-pneumonia is too high, especially in infants; the incidence of the disease would be reduced by fulfillment of diet requirements, maximum of ultraviolet ray exposure, and the adequate development of the heat regulating mechanism; the prognosis of broncho-pneumonia may be improved by correlation of loss of weight with the unfavorable signs and symptoms; measures taken primarily to prevent and relieve weight loss in a most important procedure to add to the treatment. Other than this, the treatment is mainly hygienic and measures considered absolutely necessary during good health to promote normal development are continued during the illness. The technique of giving water and citrated blood intraperitoneally is very simple, is a safe procedure, and is a measure that will help to reduce the high mortality of broncho-pneumonia.

## REPORT OF TWO CASES OF ULCEROGLANDULAR TULAREMIA

L. R. WILHITE, M.D.  
PERKINS

Tularemia, as you know, is an infectious disease due to the bacterium tularense; transmitted to man by the bite of an infected insect or tick, or by lodgment on the body of blood from an infected rodent, usually rabbits.

It is an interesting bit of history to note that tularemia was first described and investigated entirely by American physicians about sixteen years ago.

Types are numbered at four: (1) ulceroglandular, (2) oculoglandular, (3) glandular, and (4) typhoidal. The cases that I have to report are of the ulceroglandular type.

*Case 1.* H. C. R., age five years, male, son of a farmer (renter). This child became ill suddenly, April 7, 1927, with high fever, vomiting, complained of headache, chilliness (possibly a chill), and general malaise. He continued this way for two days before I was called to see him.

Examination showed a boy of about average size for his age, well nourished but acutely ill. Temperature 105 degrees Fahrenheit, pulse rapid, cheeks flushed and he was very nervous—slightest noise causing him to jump or twitch. There were no other findings of importance and influenza was thought of, but on closer inspection an enlarged right inguinal gland was found, it was very painful and faintly red. This boy had been going barefooted and the weather being rather cool, he had "chapped" his feet, but a small red, painful papule was noted in this "chapped" area. On questioning him, he revealed this interesting information: five days previous he and his sister had been rabbit hunting with their dogs and the dogs caught several rabbits which the youngsters skinned and opened for the dogs to eat. The mother stated that both children had considerable rabbit blood on them when they returned from their chase. An older brother had noticed many dead and dying rabbits in the brush and thickets, he had also opened one and found a spotted liver. From this information a tentative diagnosis of tularemia was made.

The personal and family history was negative in this case.

The fever in this case continued, with irregular intermissions, for several days.

The papule broke down and formed an ulcer about one-half inch in diameter with rather elevated edges, it healed very slowly and the glandular enlargement existed for about ten weeks before subsiding. January this year (1928) I collected a blood specimen from this boy and sent it to the laboratory of the State Board of Health and they sent it to Dr. Edward Francis, Hygienic Laboratory, Washington, D. C., who reported the agglutination test positive for tularemia in dilution 1:320 but not higher.

*Case 2.* Ivadail R., female, age 7 years, sister of case No. 1. Began to complain of headache April 9, 1927, vomiting, chilled, had a very high fever and one convulsion. Knowing the history of this girl's brother, and that she had assisted him with the rabbits I immediately suspected tularemia.

This child was well nourished and normally developed but was unquestionably very sick. Her temperature was 105 degrees Fahrenheit, very rapid pulse, extremely nervous, greatly prostrated. The axillary glands of the left side were enlarged and painful. A small red papule was discovered on her left thumb, extensor surface. This papule finally formed an ulcer about 3-8 inch in diameter. On the fifth day this patient's fever subsided, but on the seventh day she began to have irregular fever and sweats. The axillary glands became very large and indurated and in about five weeks suppurated. I took this patient to the laboratory at the A. & M. college before incising the resultant abscess, hoping that they could determine definitely the type of infection, but I was never able to get a report on the pus obtained. The abscess healed in about four weeks and the child is apparently in good health at this time.

Past and family histories negative.

Laboratory findings: urine negative, blood count 10000 leucocytes. Dr. Francis, in January, 1928, reported the agglutination test for tularemia positive in dilution 1-160 but not higher.

These cases were shown before the Payne County Medical Association in May, 1927, at Perkins.

## WOMEN'S AUXILIARY

Address by the President  
MRS. EDWARD P. ALLEN  
OKLAHOMA CITY

*Ladies:* Our programs have always provided for an annual address by the president on the occasion of our State Auxiliary meeting. A brief history of the auxiliary will not be inappropriate as an introduction.

I feel the auxiliary is still in its infancy. We do not find our satisfaction in numbers alone, but our greatest asset is found in the type of women who constitute our membership.

The bringing together of our doctors' wives and mothers in small groups, under favorable conditions, can have but one result, and our members, through this fraternal exchange of thought, become broader in conception, more liberal in consideration and more practical in achievement. Let us then, for our better understanding, note some of our purposes and the things for which our organization stands.

If our auxiliary is based upon service and we have fully considered the significance of service in its broadest sense, we have committed ourselves absolutely to the elimination of selfishness, and to the performance of acts and deeds, which, within themselves, are not necessarily a credit to us as individuals, but which are directly beneficial to ourselves, the community and the State. True service is willing service. If we are not willing to give of our time, even though it calls for a sacrifice, then we have not complied with the first principle of a physician's wife. We can't accomplish this end by a reluctant contribution of time which is not needed for other purposes. We must recognize that a part of the day, week or month will be willingly used for the advancement of our cause when necessity demands.

It is the person herself, personality, without it nothing of real value is ever accomplished. What the auxiliary most needs is the woman herself. It's the human touch that brings results—association of one personality with another—the lending of one's influence to those who need it. There are many women, some of whom, perhaps, have joined the auxiliary, but would be glad to settle their obligations with perhaps a few dollars if they could be assured that they would not be called on.

An hour of one's time, or even a dollar delivered under proper circumstances at the proper time in the proper manner, from the hand of the individual herself, is worth more than her cold, lifeless check in ten times that amount delivered by mail or through a third person. If we can unite these three great elements—time, means and personality—in our efforts to accomplish the greatest service, we have achieved the first great requisite in our auxiliary.

But a purpose, assuming the proper attitude and having the means wherewith to carry out our plans, is still insufficient unless these are all properly directed. It is one thing to give to a needy individual, and another thing to really assist the same needy individual by our gift. Rendering service is rapidly becoming scientific in its nature.

The State Auxiliary consists of counties of the State, the members and officers elected by the individual county consisting of a president, president-elect, first vice president, secretary and treasurer. It is a difficult matter to build a great organization in a short time, and eliminate all the pitfalls or opportunities for discordant action. In order to complete any society we must have cooperation, must be sympathetic, consistent and do our best. We can't get far by criticism.

In order to have a live and progressive auxiliary, you must have a strong leader. A live club with a dead president is dead to start with. A careless, indifferent secretary will kill any organization. Then, to have a live auxiliary, have carefully selected members. Select officers with care and judgment; adopt a program or work suitable to the society and locality in which it is situated. We are all indebted to Mrs. John O. McReynolds for having conceived the idea of this great work.

The Women's Auxiliary offers to the doctor's wife an opportunity for service that is denied the women of every other class, and surely she will measure up to her obligations. You counties who have not organized, if you would spend a little effort in getting together you would find many of your doctor's wives earnest, cultured and efficient, and you would have the cooperation of your entire county. Since we have organized our county, Oklahoma, I have met and learned to know and love many whom I had scarcely known before. Our experiences are practically the same.

When there is no local auxiliary a physician's wife may become a member at large by paying the annual dues of \$2.00. Wives of the medical corps of the army, the navy and the public health service are especially invited to become members at large—if it is impossible for them to have county affiliations. Think how helpful the wives can be in developing health programs in their clubs, promoting health of our people. Again, service and loyalty to our husbands and their profession, to our homes and county, "with a will to do and a heart to serve," in a social, educational or philanthropic way.

I desire at this time to express my most sincere thanks to the officers and committees who have given their support during the year.

With these few thoughts, which I hope have been made clear to you, I am going to take this opportunity to introduce to you one of the outstanding women of these United States, not only in auxiliary work, but in many other worthy activities.

She is none other than Mrs. John O. McReynolds, President, Women's Auxiliary American Medical Association, from our neighboring City and State, Dallas, Texas.

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#### TO THE MEDICAL AND SURGICAL PROFESSION

THE SYSTEM OF CAMP PHYSIOLOGICAL SUPPORTS is now used and highly endorsed by many doctors and surgeons in all parts of the world. This system is no doubt familiar, in name at least, to many others who have not yet investigated its merits, but who need efficient supports in their practice and would be interested and glad to learn of a thoroughly competent, practical line of wearable garments—quickly available.

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# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol. XXI SEPTEMBER, 1928 No. 9

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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### EDITORIAL

#### EXOPHTHALMIC GOITER

It is the opinion of very competent Oklahoma physicians that hyperthyroidism is increasing in Oklahoma. Whether there is an actual increase or that closer observation of symptoms and better means of making more accurate diagnosis has produced this opinion, is difficult to say, but certainly it is the writer's experience that more of these cases are seen than formerly. Not many of them, fortunately, reach the severe stage, which often ushers in fatal termination, known as the crisis of exophthalmic goiter. So important is it that early recognition of goiter and institution of proper treatment be made in order to

avoid the cases ever reaching the stage of crisis, that Dr. Frank H. Lahey, Boston, recently contributed the leading article on the subject of "Crisis of Exophthalmic Goiter."\*

Usually goiter is characterized by stages of periods of acuteness and remission, but the remissions are not total, they are only relative matters and the longer the case exists the more difficult of eventual control it becomes. Many apparently extraneous matters seem to affect and produce exacerbations; fatigue, intense psychical stimulation, acute infections, all seem to usher in to the chronic condition, the state of crisis, which is sudden, shocking and dangerous, and taxes the attendants' efforts to limit if the symptoms are to be ameliorated to the state where operation is to be successful. If the case is in crisis, operation at the time is not only out of the question, but unwarranted from any standpoint. The goiter patient is constantly in danger of having some otherwise simple procedure precipitate a state of crisis, such, for instance as acute tonsillitis, appendicitis, cholecystitis, and the administration of ether as an anesthetic, though it may suddenly arise without any known cause except existence of simple hyperthyroidism.

The writer believes that somewhere in the course of hyperthyroidism surgical intervention is indicated as the means offering the best end results. Several cases have been observed where the over use of iodine therapy seems to have rendered this drug useless and ineffective in the patient and at the time it was most needed to use as a preliminary in order to place the patient in the best condition for operation. As a rule Lugol's solution, administered for ten days prior to operation, brings a sharp decline in the basal metabolic rate, and at this stage operation promises the most brilliant results. Unfortunately, iodine, which formerly seemed to offer so much as a therapeutic control agent, cannot be depended upon, and does not maintain a low basal rate, except for a fleeting few days. After this another course at a later date may bring about some reduction, often it does not, and the surgeon is forced to operate upon a case which he cannot place in the best condition for operation. It is believed that iodine should not be administered, without first explaining to the patient that it is only a temporary measure, given for the express purpose of preparing the case for operation, and that permanent results are not to be expected if

operation is deferred simply because the patient feels better and the basal rate has fallen to normal.

If the case has reached the dangerous state of dry skin, delirium, vomiting, diarrhoea, rapid pulse, fibrillating heart and high temperature, very prompt measures must be instituted if it is to be saved and a stage of remission is to be reached where operation may be undertaken. The measures consist of fluids, pushed to the limit. Sedatives, fluids, iodine, glucose must be given intravenously. It seems that little reliance is to be placed upon the use of fluids by proctoclysis. In this condition as in many others they are not retained or absorbed, they are slow and uncertain. Every case of fatigue, nervousness, irritability should be referred to the internist for a careful working out to determine, if possible, existence of hyperthyroidism as a possible underlying cause of the symptoms. Certainly iodine should not be undertaken unless its temporary results are kept constantly in mind.

\*New England Jour. of Medicine, August 9, 1928.

## THE COUNTY MEDICAL SOCIETY

This is the beginning of the open season for county medical societies, or it should be, wherever, even the smallest congregation of physicians can be gotten together.

Rural physicians especially have been unusually busy, and will be for some time, caring for the additional load imposed by a wide existence of malarial infection. There are no known new roads for the control of this infection, so, its control and eradication should prove of great interest to physicians and benefit to the public. Thousands of Oklahoma children are now entering the public schools, and this very massing will produce a sharp rise in the diseases incident of children. These diseases are accompanied by mildness, severe illness and considerable fatality to life. Some of them are preventable, others fairly easily controlled and treated, while some are very difficult of control. All of these problems are subject to variation and exceptions as to behaviour. When physicians meet and discuss them, relating their failures and successes, their bafflements, and how they met them, then everyone present has an insight to the other fellows problems, and it is a dull man, indeed, who may not either reap some benefit or pass some along to his fellow practitioner.

County society officers should at once plan for prompt meetings and reorganization in order to reap benefits from the time and occasion.

## Editorial Notes - Personal and General

DR. and Mrs. H. A. LILE, Cherokee, returned August 4th, from an extended trip to the Great Lakes region.

DRS. C. B. and PAULINE BARKER, Gu'hrie, have returned from a summer vacation spent in Hawa'ian Islands and Southern California.

DR. CURT vonWEDEL, Klahcm: City, accompanied by his family, has returned from an extensive trip through the Rocky Mountains.

DR. C. H. DOLPH, formerly of Heneryetta, has located in Erick and is connected with the Erick Hospital, doing eye, ear, nose and throat work.

DRS. FRANK McGREGOR, Mangum, and C. A. THOMPSON, Muskogee, made a flying trip to Texas recently. The object—prairie chicken—some were secured.

DR. O. R. GREGG announces the removal of his office from Pawhuska to 403 National Bank Building, Enid. Dr. Gregg limits his work to urology.

DR. W. P. FITE, Muskogee, has returned from a month's vacation at his summer home, Nevis, Minn. Fishing was his principal and most serious occupation on the trip.

DR. L. C. PRESSON, Tulsa, has returned from a month's clinic attendance at Toledo, Ohio, with Dr. McKesson. While absent Dr. Presson's work was carried on by Dr. J. N. Shaunty.

DR. ROBERT L. MITCHELL, Muskogee, accompanied by his son, made an extensive trip to New Mexico, Arizona and Mexico in August. Juarez was not omitted from the itinerary.

DR. G. H. STAGNER, Erick, spent two weeks of intensive military training at Fitzsimons General Hospital, Denver, in August. Dr. Stagner is a Lieutenant-Colonel, Medical Reserve, and is in line for promotion to full Colonelcy.

DR. EARL D. McBRIDE, Oklahoma City, left for Denver, Colorado, August 15th, where he is to meet Mrs. McBride and their eldest daughter, Pollyanna, who have been visiting Mrs. McBride's parents in Glendale, California. They expect to return home about the first of September.

STEPHENS COUNTY MEDICAL Society met at Duncan August 28th as guests of Dr. R. L. Hall. The program: "The Medical Profession," W. T. Salmon; "The Business of Practicing the Healing Art," J. W. Nieweg; "Evolution in Medical Science," R. O. Braswell, Ft. Worth. Dr. C. C. Richards will be host to the next meeting.

DR. A. E. BOWEN, Oklahoma Health Department, recently announced that 300,000 capsules of quinine has been distributed in Bryan, Choctaw and Pushmataha counties, as a part of the efforts to stamp out widespread malarial infection. Extensive efforts are also being made to limit the infection by spraying with oil all stagnant waters that may be reached with any hope of betterment.

THE BARTLESVILLE CORRESPONDENT reports the following summer activities of members of Washington county profession:

Dr. E. E. Beechwood and family will spend part of the month of September in Chicago.

Dr. H. G. Crawford and family are spending two weeks in Minnesota.

Dr. G. V. Dorsheimer was in Colorado for two weeks during the month of August.

Dr. F. S. Etter and family are spending part of the month of September with relatives in central Missouri.

Dr. O. I. Green and family took a two weeks' motor trip to Chicago and other Illinois points.

Dr. L. D. Hudson and family made a motor trip to Seattle and other northwestern points during the summer.

Dr. W. H. Shipman and family spent part of July and August in Ann Arbor, Michigan, taking post-graduate work.

Dr. J. G. Smith and family spent two weeks of August in the mountains of Colorado.

Dr. and Mrs. H. C. Weber took a motor trip to Denver, Yellowstone Park and other western resorts.

Dr. O. S. Somerville and family spent two weeks in central Colorado.

Dr. and Mrs. G. F. Woodring will spend part of September in the Ozarks.

Dr. and Mrs. J. V. Athey will spend the month of September in San Francisco, Los Angeles and other California cities.

Dr. and Mrs. F. C. Rowerts spent two weeks in Colorado Springs, Colorado.

### UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.  
1010 Medical Arts Building, Oklahoma City.

The sterno-clavicular junction is a favorite target of syphilis.

Anal condylomata may occur at almost any time during the course of syphilis.

Better an untreated bladder stone than sharp stone sliver left carelessly behind after lithotomy.

Palmar syphilitic lesions may closely resemble eczema, and a syphilitic lesion may become eczematous.

The "mulberry molars" are quite as suggestive of congenital syphilis as are the classical Hutchinsonian incisors.

Handle carefully the introspective patient who broods over his condition. Psychological influences can defeat your well-laid plan of treatment.

Vague pelvic aches and pains in young adults may be caused by immoderate sexual excitation—common enough in these days of "fraternization" of the sexes.

The ingestion of comparatively large amount of alcohol will markedly influence the Wassermann test. It is a wise plan to investigate the drinking habits of patients.

Forced dilation of the posterior urethra by means of a mechanical dilator should not be done for the first time without a preceding examination of the patient's heart.

When treating gonorrhea enlist the hearty cooperation of your patient. Make him alive to the fact that ultimate results of your treatment is, in no small measure, in his hands.

Sarcoma of the kidney can be diagnosed from the urine. A positive diagnosis may only be made when large shreds of connective tissue as well as the characteristic sarcoma corpuscles are demonstrated.

Remember that it is possible to avoid gonorrheal urethral stricture if a gentle mode of treatment is observed. It has been said that in China where urethral treatments are not used gonorrheal strictures are not seen.

The presence of large numbers of squamous cells in a chronic urethral discharge may be attributed either to traumatizing treatment or to a stricture of small caliber. The history and size of the urinary stream make the differentiation readily possible.

For syphilitics approaching the age of sixty the arsenical should be used in only moderate sized doses.

Can Gonorrhea Originate Without Infection With the Gonococcus? Cedercreutz observed three cases in which the manner of infection remained puzzling. The justifiability of regarding the gonococcus as a distinct entity is questioned, and more frequently detailed study and publication of baffling cases is urged. He does not reject the possibility that in exceptional cases gonorrhea might originate in ways other than through direct or indirect infection from a second person with gonorrhea. If this were true it would surely heighten our opinion of the veracity of many cases of many people.

False Renal Colic. — St. Kartar (Medizinische Wochenschrift, April 6, 1928), says that it is little known that inflammatory conditions of the seminal vesicles can simulate kidney affections. For example, a spermatoecystitis, arising from a preceding gonococci or bacillus coli infection, can cause symptoms which cannot be distinguished clinically from those of renal colic. Confusion with nephrolithiasis is made more possible by the fact that bleeding frequently occurs in the vesicular inflammation (without, however, occurrence of preceding bladder changes). The diagnosis, again, is sometimes difficult to make because the kidney on the same side as the inflamed seminal vesicle is involved by the process, since the close proximity of ureter and seminal vesicles subjects the ureter to blockage or infection by a tense, inflamed vesicle. In such a case, when conserva-

tive measures have failed and the infection seems to be extending generally, operative removal is indicated.

**A New Treponemicide of Arsenic and Bismuth Basis.**—Boccia and Maglione (Revista Sud-Americana) come to the following conclusions in regard to this new combination of arsenic and bismuth as a treponemicide:

1. The primary and secondary manifestations disappear very rapidly after two or three injections. The action on the chancre is the same as that of neosalvarsan by the intravenous method.

2. The injections are given from three to seven days apart in doses from 3 to 5 cc. deeply into the buttocks. The injection is slightly, if at all, painful. For women and children the dose is 1.5 to 2 cc.

3. A stomatitis resulted in one case.

4. After a series of ten injections no renal disturbances were observed. It is well, however, to keep constant watch on the renal function throughout the treatment.

5. There were no other untoward symptoms observed in even the feeblest patients.

6. The Wasserman reaction became negative after the series of treatments.

7. This new preparation is more treponemicidal than mercury. It can be used with great benefit in patients in all stages of the disease.

**Chronic Prostatitis and Its Present Treatment**—Owsley Grant and James R. Stites (Kentucky Medical Journal, May, 1928), record conclusions which their own experiences have justified. They stress the importance of examining the prostate completely in the routine physical examination. Chronic prostatitis is never cured, they believe, and the patient should receive prolonged treatment at stated intervals. Deep seated infection may escape detection at the first massage and is proven only by several massages after diathermy. Massage and diathermy are the best means of treatment, but should be carried out carefully. The authors have tried direct injection of mercurochrome into the prostate through the perineum in one hundred cases with some success.

**Production of Renal Injury in the White Rat by the Protein of the Diet.**—Drs. L. H. Newburg and A. C. Curtis, Ann Arbor, Mich.: Great care was taken in the makeup of the diets to see that they included all the essential food elements according to the modern doctrine. The percentage of protein in the diet varied between 12, 18, 25, 32, 39 and 75. As the protein percentage increases, evidence of renal injury appears. The longer the feeding is continued, the more marked the evidence becomes, so that when there is protein in the diet to the extent of 75 per cent, the number of casts in the urine is large. The diets contained various kinds of protein. We have found while casein is slightly injurious, the injury might easily be overlooked. If certain other types of protein are used the injury is so great that there cannot be any reasonable doubt about the effects from such diets. If beef muscle is used, it gives ten times the amount of albumin in the urine, and a large number of casts; and when liver is used, the injury is further increased. No animal on a liver diet survived a year. Sections of the kidney of a rabbit on a diet containing 30 per cent of beef protein for fifteen months showed abnormality in the form of dilatation of the tubules. The

same diet fed four months longer caused an interesting glomerular lesion. A diet of 40 per cent of beef protein results in a connective tissue increase, especially marked around the glomeruli. The kidneys without exception in the animals receiving liver were granular. We wish to emphasize that the type of protein is the most important factor in considering whether any diet high in protein will produce kidney injury. The next important factor is the time limit. A long time must be allowed to produce the injury. The final effect is obtained from the concentration of the protein, which seems to us to be less important than the type of protein, or the duration of the experiment.

## EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.  
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**Angioid Streaks of the Retina.**, Griscom, J. M.: *Am. J. Ophth.*, 1928, xi, 3s, 95.

Griscom reports a case of angioid streaks of the retina occurring in a colored man sixty-eight years of age. There was no visible evidence of retinal hemorrhages or previous retinal or choroidal disease. The condition was bilateral. Vision was 20-40 in each eye. A peculiar slate colored pigmentation of the skin of the forehead was explained by Corson, the dermatologist consulted, as a pigment proliferation due to neurotrophic influences. The Wassermann test was negative.

Angioid streaks of the retina are usually attributed to hemorrhage, but in the case reported this cause appeared to be ruled out. Griscom suggested that the pigment disturbance may be due to proliferation of epithelial pigment caused by a neurotrophic change affecting certain branches of the fifth nerve, including the ciliary nerves.

**Cataract and Postoperative Tetany.**, Jacques, L.: *Am. J. M. Sc.*, 1928, clxxv, 185.

The author reports two cases of bilateral cataract occurring during the course of postoperative tetany and tabulates thirty-two cases collected from the literature. Only four of the patients were males. In nine instances the cataracts were associated with changes in hair or nails. In most of the cases they were discovered within two years after thyroidectomy. In the author's second case there were only mild evidences of parathyroid deficiency.

In discussing the prevention of postoperative cataract, Jacques emphasizes the necessity for prompt and adequate control of the latent as well as the active manifestations of tetany. In one case the administration of parathormone in sufficient amounts to abolish all neuromuscular manifestations failed to arrest the progress of the cataracts.

**Acute Stenotic Laryngitis of Infectious Origin.**, Champion, A. N.: *Texas State J. M.*, 1928, xxiii, 669.

Acute stenosis of the larynx produces alarming symptoms. Its causes vary. The author reports two cases which simulated laryngeal diphtheria, but were due to an undetermined infection.

The first was that of a boy twenty-two months old who, three nights previous, had had a sudden attack of coughing and respiratory distress with a temperature varying from 100 to 103 degrees F.

The cough was of a "barking" character but not severe. The voice was husky. The dyspnoea was so extreme that the child was unable to sleep at night. On the second night he received 10,000 units of diphtheria antitoxin. When he was seen by the author, the respiratory rate was very rapid and there was marked inspiratory dyspnoea with retraction of the sternum and ribs, but no cyanosis. No membrane or exudate was visible in the fauces or pharynx. Examination of the chest was negative except for an inspiratory wheeze. X-ray examination of the chest did not show foreign body. The thymus was not enlarged. Throat and laryngeal cultures were negative for bacillus diphtheriae, but positive for staphylococci, streptococci, and pneumococci. The arytenoid cartilages, aryepiglottic folds, ventricular bands, and subglottic mucosa were red and swollen and only a slit-like aperture remained for respiration. There was no membrane or exudate. Tracheotomy was performed and was followed by recovery.

The second case was that of the twin brother of the first patient and had a very similar history and course.

The cause of the condition in these cases is unknown, but was probably a streptococcus infection. To explain the marked changes in the larynx the author suggests that either the causative organism had a predilection for the larynx or the patients had a hereditary weakness to infection of the laryngeal tissues.

In the diagnosis the condition must be differentiated from laryngeal diphtheria, the early stage of measles or scarlet fever, bronchopneumonia, influenza, angioneurotic oedema, bulbar palsy, post-diphtheritic paralysis, and foreign body.

In the cases reported, the final diagnosis rested chiefly upon the laryngoscopic findings.

The indications for treatment are clear. There are no specific therapeutic measures. The immediate problem is to provide ample breathing space, and this is easily accomplished by tracheotomy. Intubation is unsatisfactory because the tube traumatizes the tissues and is difficult to introduce and keep in place and there is very great danger of aspiration pneumonia. Tracheotomy should be done early and should be planned for when the patient finds it necessary to bring the accessory muscles of respiration into play.

**The Pathology of the Lachrymal Glands in Chronic Epiphora.,** Beigelman, M. N.: *Am. J. Ophth.*, 1928, xi, 3s, 125.

Beigelman believes that unsatisfactory results in the treatment of persistent lachrymation may be due, in part, to lack of attention to the secretory portion of the lachrymal gland. The object of this article is to present observations which prove the possibility of a chronic dacryo-adenitis with epiphora as the only system. He has examined pathologically six glands removed after sac extirpation. In four, chronic inflammation of various degrees was found. Cellular infiltration was very noticeable around the excretory ducts, and there were diffuse smaller areas of infiltration in the interlobular and interacinous connective tissue.

The distribution of the infiltration suggested extension of the inflammation by direct continuity from the subconjunctival tissue. Beigelman concludes that the histopathological changes noted by him in the lachrymal glands are sufficient to explain hyperfunction of these glands with excessive

lachrymation. The treatment of such hyperfunction should consist in X-ray irradiation or in surgical measures such as deep incisions, cautery puncture, or extirpation of the gland, to diminish the secretion.

**Mastoiditis In Infants,** McCready, J. H.: *Atlantic M. J.*, 1928, xxxi, 296.

In the case of infants with an unexplained gastro-intestinal syndrome, a thorough examination of the ears should be made. The drum may be thick and grayish and show no bulging and no light reflex; or it may be thin and lustreless and without bulging or light reflex; or it may be of a normal appearance with a light reflex and some degree of bulging in the extreme superior-posterior part. Any of these pictures demand an immediate myringotomy. If the symptoms then persist, opening of the mastoid is necessary. The author believes that, in addition to the ordinary technique, the tegmen and zygomatic cells should be opened. He performs the operation under ether or ethylene anaesthesia, and reports that in 114 cases there were no anaesthesia deaths.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
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**Light Treatment in Surgical Tuberculosis.** Sir Henry Gauvain. *Lancet* 1, 754, April 9, 1927.

The sun does not cure all forms of surgical tuberculosis. At the best it is merely an aid to and acceleration of cure. By the majority general treatment by mutual sunlight is considered the best form of treatment.

Tuberculosis may arise and develop in sun-cure in the alps. Such cases may improve or heal when treated at sea-level or by brine baths on the plains. No reasonable explanation of this has yet been offered. There is a great diversity of response in the individual being treated. The response is usually seasonal and is greatest in the spring and early summer, May and early June. Where cases cease to respond, transfer to shore conditions supplies a new stimulus, sea-bathing, spraying, paddling, cool sea breezes and assistance given by the altered character of the light produce a new acceleration. The cachectic non-pigmenting patient of low resistance will not do nearly so well in the alps as at home. By the use of "vita" glass, which must be kept clean, sun balconies can be used to provide exposure to light when, owing to cold or rain, exposure to the naked skin is impracticable. Artificial light may be installed to supplement natural light. In this way the principle of varying stimuli may be utilized.

There is also a daily variation in response, morning light is best—possibly as immediately following the darkness.

The different responses in different individuals seem infinitely variable. Heliotherapy in surgical tuberculosis is more an art than an exact science.

There is a constant rise in the basal metabolism after a course of sun treatment. This is due to exposure to cold air, not to sunlight. This increased metabolism means ingestion, digestion and absorption of more food. With this goes a speeding up of repair in damaged tissues.

Pigmentation is a valuable indication of the utility of treatment for it has a protective function. As a rule a well pigmented patient can tolerate and benefit by longer exposures to light and cold air than a non-pigmented, and the danger of error is diminished.

Local light treatment of superficial lesions is governed by entirely different rules of application. It is meant to produce a direct reaction to a definite stimulus, e.g. in lupus vulgaris. Local light is of value by its bactericidal effect, its thermal action and the local favorable inflammatory response.

If these inferences are correct, the search for a suitable artificial light of constant character and intensity is illogical. It is better to adopt the method of varying stimuli to produce optimum responses.

The psychological action of light is evidenced by the cheerfulness and vivacity of the suitably isolated subject. This is an interesting and valuable factor in light therapy.

**Joint Tuberculosis.** Russell A. Hibbs and Alen D. F. Smith. *Med. J. Australia*, 1810, June 4, 1927.

The general belief that joint tuberculosis nearly always starts in the bone and invades the joint secondarily, is probably untrue.

The study of the tissues from early operations on tuberculous joints at the New York Orthopaedic Hospital shows that in the knee joint, at least, the process usually begins in the bone—and in these cases the diagnosis is very difficult during the first two years, and is often missed—until late in the disease.

The result of the difficulty in making an early diagnosis are:

1. Many cases go untreated until so far advanced that a cure is difficult.
2. Many non-tuberculosis cases are subjected to the discomfort and expense of the standard treatment for tubercular joints.
3. Reports of the results of conservative treatment of tuberculosis joints are unreliable.

It is the custom at the New York Orthopaedic Hospital, when a positive diagnosis cannot be made, to do an exploratory operation, and remove portions of synovial membrane for laboratory examination. The incision is then closed without drainage.

No suspected joint should ever be immobilized until a positive diagnosis is established. Immobilization soon produces muscle wasting, limitation of movement and decalcification of bone, which obscure diagnosis.

Heliotherapy does not, in the authors' experience, cure joint tuberculosis. Permanent cure is obtained only by absolute elimination of movement from the joint by arthodesis.

Hospitalized under the most favorable conditions for a period averaging six years, twenty per cent, of knee cases apparently recovered, with a fair range of motion. Hip joint cases showed much worse results. It is felt that so small a chance of recovery is not worth the sacrifice of such prolonged treatment to the average patient.

A spine can be fused at any age. The knee joint can be arthrodesed in all cases at six years, in some at four. Arthrodesis gives seventy per cent of cures in tuberculosis of the spine and between ninety and one hundred per cent in knees. The average period of hospitalization has been reduced to eighteen months.

**Some Aspects of the Problem of Joint Tuberculosis.** Russel A. Hibbs, *South Med. J.*, xx, 278, April, 1927.

An end-result study was made of cases which had been under observation for from five to fifty years. Of seventy-seven cases of knee joint tuberculosis, thirteen per cent were incorrectly diagnosed, seven died of other forms of tuberculosis, forty-three became quiescent, sixteen again became active — of the remaining twenty-seven cases, five had stiff joints, twenty-two had varying degrees of motion, sixteen cases had fusion operations and had remained free from symptoms. The result of conservative treatment of tuberculosis of the hip was still worse; 208 cases were treated. Twenty-two per cent were incorrectly diagnosed, leaving 162 cases with probable tuberculosis. Twenty-four per cent died; of the 144 remaining cases seventeen are still active; two are quiescent with probably free motion; forty-one are quiescent with marked limitation of motion and varying degrees of deformity; fifteen cases had relapses after varying periods of quiescence. Average duration of treatment was seven and three-tenths years. More than eighty operations have been performed with a high percentage of cures in those in which a sufficient length of time has lapsed to make any judgment possible. Relapses occur in tuberculosis joints, ten, fifteen and twenty years after treatment has been discontinued and the cases have been classified as cured. The terms "quiescent" and "cured" have been inaccurately used. The condition of the general health is no guide. He says there is no evidence yet to prove that heliotherapy has any particular influence upon the progress of the disease, and there is grave danger that the belief that it has, which is so generally accepted, may delay the proper study of the disease for another decade.

## DERMATOLOGY AND RADIO-THERAPY

Edited by C. P. Bondurant, M.D.  
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**Practical Treatment of Eczema:** Prof. V. Klingmüller. *Zeitschrift für ärztliche Fortbildung* November 1, 1928.

When the skin becomes oversensitive to any kind of endogenous or exogenous irritation, it does not tolerate even mild or usual irritations any longer. A typical example of this is the case of a wash woman who becomes incapable of carrying on her work when her skin has once become hypersensitized through the use of a new powder, gout, nephritis, diabetes, etc.

Of great importance is the removal of all scales, crusts, pus, and salves with a benzine oil or a wet dressing of camomile tea, or a 3 per cent boric acid with ¼ per cent recorcin. The general mistake is to use too strong lotions. It is stated that when an agent does not cure an eczema or bring it to a halt in 3 days it is useless. When the eczema is intensive he recommends the cleansing bath with the addition of 50 cc. of balnazid (merck) to be given twice each week. In an acute eczema the wet bandages already mentioned are used and alternated with a bland powder. The following is recommended: potato or rice meal, or zinc oxide and starch equal parts in a vaseline base. When the skin is dry more oil may be

added with one-half to one per cent of recorcin or 3 per cent borax. To these salves may also be added the usual anti-eczemata (sulphur, tar, chalk, chrysarobin, etc.) Solutions that dry as powders are useful: zinc oxide, starch, glycerin: aa 25, aqua dist. 70 per cent alcohol aa 12.5. Special care should be taken to avoid any agent becoming too dry or allowing sweat or serum to collect under dressings or applications.

X-rays are of great service in nearly all forms of eczema and especially in acute types. Special care should be exercised in their use. One-fourth to one-third erythema doses are recommended at intervals of eight days.

**Exfoliative Dermatitis: H. D. Holden-Davis, Brit. J. Dermat. 39:435, November, 1927.**

The author first considers at some length the historical aspect of exfoliative dermatitis and gives the following classifications: (1) the classic disease around which Hebra and Wilson fought, (2) a well-known recurrent form, mild in type, (3) the exfoliative dermatitis of infants, often called Ritter's disease, and (4) exfoliative dermatitis following the administration of organic compounds of arsenic. Special reference is given to the occurrence of a lymphocytosis in many cases. The general and histopathology are studied with special reference to the author's cases. Interesting photomicrographs are included. From the microscopic studies it is demonstrated that nearly all parts of the skin are affected equally and the author is of the opinion that the process begins in the deeper parts and that the later injury to the horny layer and the consequent exfoliation is the result of earlier deep inflammatory processes. He gives some interesting points on the relation of exfoliation dermatitis to other dermatoses. As a tuberculid its kinship to tuberculosis is discussed and cases described by Bruusgaard as erythroderma exfoliative universalis tuberculosa and of Fiocca as "erythrodermia maligna tuberculosa" are mentioned. His conclusion is that the occurrence of tuberculosis in this condition is merely a terminal infection. Attention is given to the relationship to various blood diseases; lymphatic or myeloid leukemia, lympho-sarcoma and lymphadenoma. He cites a possible relationship to these diseases and thinks that detailed histopathologic studies will bring to light cases of a transitional type.

**Reactions of the Skin to the Menopause: Montlauer, Paris Medical, January, 1928.**

In this paper some valuable comment upon the appearance of skin changes which precede and accompany the menopause is made. The author points out the close relationship of concurrent disturbances of the endocrine glands and the sympathetic nervous system. As an outstanding example he calls attention to the rosacea characterized by congestion of the face and nose and especially to this condition seen in women between the ages of 30 and 40. True acne rosacea occurring between the ages of 30 and 45 is often seen in chronic seborrhea victims, many of whom have experienced ovarian or uterine disturbances. This congestion is taken as evidence of ovarian deficiency and during this period pruritis is a common disorder. Pruritic changes of the genitalia are particularly prevalent in stout women. In the very nervous type this pruritis is excited on the slightest cause and the condition proceeds to a true neurodermatitis. This shows a disfunction

of the ovary with sympathetic participation. The effect of occupation in relation to endocrine disturbances is cited as possible etiology of some eczemas which accompany the menopause. Three theories are given as possibilities: (1) the ovary has an antitoxic function, in that it destroys poisons brought to it by the blood. In the menopause this capacity is lost. (2) It is a question of an anaphylactic phenomenon in which skin, nerves and viscera take a part. (3) The ovarian insufficiency disturbs the balance of endocrine activity and other members of the endocrine system especially the adrenals and thyroid respond by hyperfunction which results in irritation of the sympathetic system. Attention is called to a case of alopecia areata which occurred with artificial menopause. He concludes that organo-therapy is valuable but advises close study before it is undertaken.

**The Etiology of Measles: Rudolph Gegkwitz, J. Infect. Dis. 41:304, 1927.**

The author was able to keep the virus causing measles alive for long periods if he followed a strict routine in its preservation. The blood was drawn at the beginning of the rash and diluted in the proportions of 1:7 to 1:10 with buffered salt solution containing the same number of anions and cations showing the same pH as the blood. A temperature of 0°C. was maintained. He produced measles by both inoculation of the skin and infection of the mucus membranes and observed that the former began earlier than natural measles or those infected by the mucus membrane. He also noted the symptoms to be of a milder and shorter duration. There was noticed a resemblance to variolation against smallpox. The measles virus was grown in vitro with a culture medium made of the blood plasma of susceptible or immune persons which was diluted 1:6 with sodium chloride solution as described for the preservation of the virus. In order to keep it alive and secure growth, it was necessary to have associated with it living cells such as slow growing bacteria regularly found in measles. With a sterile filtrate of these cultures, reactions which are similar to measles can be produced in human beings and these persons are later immune against large amounts of infectious blood. Monkeys can be made sick by injection of this material and the specificity of the reactions can be proved by using the serum collected from the monkeys after the reaction to protect infected human beings against measles. The serum from normal monkeys will give this protection.

## TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
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**Remarks on the Clinical Diagnosis of Pulmonary Tuberculosis: Charles R. Austrian, M.D., Amer. Rev. of Tb., July, 1928.**

The recognition of pulmonary tuberculosis early in its clinical course requires skill in the detection and interpretation of the signs of pathological changes in the lungs, familiarity with the symptoms of the disease, and ability to correlate objective and subjective deviations from normal.

No single procedure gives more helpful clues than a record carefully and intelligently collated. From the personal history of the individual much

information is to be acquired. Of cardinal importance are hemoptysis, pleurisy with effusion, fever, rapid pulse, loss of weight and lack of endurance, chills, sweats, thoracic pain, cough, expectoration, and digestive or menstrual disturbances, though important are less significant.

A history of frequent respiratory infections should be analyzed carefully. One of the usual modes of onset of tuberculosis of the lungs is with a cold, so called, whenever what seems to be an ordinary acute respiratory infection leaves as a residual symptom, a cough that persists more than a month, disease of the lungs must be considered.

Gastrointestinal disturbances, often vague and ill defined, developing, disappearing, recurring without apparent provocation are frequent in early pulmonary tuberculosis. The presence of fistula—in and demands investigation of the lower respiratory tract because of its frequent association with pulmonary tuberculosis.

The importance of inspection, percussion and auscultation are duly stressed. The most constant and significant sign of pulmonary tuberculosis is a shower of medium moist inspiratory rales heard constantly at the apex with or after expiratory cough. The X-ray is valuable, but in no case can the utilization of it take the place of a careful physical examination and a clinical survey.

**Pneumography As A Diagnostic Aid In Children:** Cole B. Gibson and Wm. E. Carroll, *Amer. Rev. Tb.*, July, 1928.

Stereoscopic roentgenographs are usually sufficient to give much of the desired information relative to the physical or anatomical characteristics of pulmonary lesions, but there are certain diseases or conditions which require still more accurate delineation than is to be obtained by stereoscopic films. The product most generally used in this country is known as lipiodol and the several methods of introduction are described.

The conditions in which the diagnosis may be made more certain by the use of lipiodol are bronchiectasis, lung abscess, bronchopulmonary fistulae, stenotic conditions of the trachea and bronchi, old emphysema with sinuses, new growths and certain excavating diseases of the lungs.

**Relapse In Pulmonary Tuberculosis:** H. Longstreet Taylor, M.D., *Amer. Rev. Tb.*, July, 1928.

The author holds that the largest proportion of all relapses occur during the first 12 months after discharge, about half as many during the second year, and at a rapidly decreasing rate thereafter.

Premature discharge of the patient is but an invitation for trouble, since the length of treatment bears an inverse ratio to the percentage of relapses. Relapses are due to attacks of intercurrent diseases, serious accidents, child-bearing and laceration, to disobedience of the rules in regard to proper methods of work and play, to mental or physical fatigue and to a return to an unhygienic environment. The outcome will depend upon the education the patient has had in regard to the nature of his disease, the danger he faces and the measures he must adopt to keep well, and his willingness to be guided by this education.

The objective of all treatment is to educate him in new habits of living. Frequent periodic examinations, in view of the relapsing character of tuberculosis, are of vital importance to the in-

dividual. A prolonged rest cure should be followed by a gradual hardening of mind and body to recover from the resulting mental and physical flabbiness.

**Massive Collapse Associated With Pulmonary Tuberculosis and Tumor:** Edward N. Packard, *Amer. Rev. of Tb.*, July, 1928.

The author reports five cases which exhibited the signs and symptoms of massive collapse, but in none of these did an operation precede the development of the atelectasis. Four of the cases had chronic pulmonary tuberculosis, one was complicated with carcinoma, one had a lung tumor.

Autopsy in two of the cases showed that the collapse of lung tissue was due to bronchial obstruction.

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## BOOK REVIEWS

The collected papers of the Mayo Clinic and the Mayo Foundation for 1927, Volume XIX, edited by Mrs. M. H. Mellish and H. Burton Loze, M.D. Octavo volume of 1330 pages with 412 illustrations. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$13.00, net.

The wide range of work performed by the Mayo Clinic makes a resume of findings unusually interesting and worthwhile. This volume is not an exception, in containing a very wide range of interesting subjects encountered by a brilliant staff of physicians. Their findings and comment make for great authority and worth. Contents contain articles on many subdivisions relating to the alimentary tract, urogenital organs, ductless glands, blood and circulatory organs, skin and syphilis, head, trunk and extremities, chest, brain, spinal cord and nerves, as well as a large amount of miscellaneous matter.

**Surgical Clinics of North America (Philadelphia Number),** August, 1928, Volume 8, Number 4, containing the clinic reports of 14 leading Philadelphia Surgeons. Illustrated, cloth, 385 pages: W. B. Saunders Company, Philadelphia, publishers.

In this issue John C. DaCosta offers the subject of Carcinoma of the Rectum in a very entertaining manner, with special reference to differential diagnosis, after which he considers treatment. In this connection a protective dressing after colostomy or other permanent intestinal drainage is illustrated. This is a very practical and helpful phase in the after care of these cases. The clinic of W. Wayne Babcock offers some very interesting material, as skin grafting upon dry bone, breaking of needle in spinal puncture and paralysis of the musculospiral nerve after therapeutic injection of quinine and urea. There are many other interesting clinic reports.

**Operative Surgery,** by J. Shelton Horsley, M.D., F.A.C.S., attending surgeon, St. Elizabeth's Hospital, Richmond, with 756 original illustrations by Miss Helen Lorraine; cloth, 893 pages, third edition: C. V. Mosby Company, St. Louis, publishers.

Dr. Horsley is one of America's authorities on surgical subjects. This is the third edition of a fine work on surgery, beautifully illustrated, and the subjects are so freely and sensibly discussed that it is a delight to read his advice and conclusions. As he is one of the pioneers in blood

vessel surgery, the work is very interesting on that subject. However, his "General Consideration," "Surgical Drainage," "Technic" and "Principles Underlying Operations for Malignant Tumors" are so full of good advice that every surgeon should bear them in mind. The entire work bears the mark of application of the many surgical problems met and controlled by the writer in his busy years as a successful surgeon.

**Diabetic Manual for Patients**, by Henry J. John, M.A., M.D., F.A.C.P., director of the Diabetic Department and Laboratories of the Cleveland Clinic. Illustrated, cloth, 202 pages, 1928: C. V. Mosby Company, St. Louis. Price, \$2.00.

Since the use of insulin has become general the fact that insulin and diet must be evenly balanced and intelligently observed at all times has forced physicians to instruct their patients upon the problems involved. Many patients are intelligent and cooperative and may be depended upon. This work is for their use.

**The Heart in Modern Practice. Diagnosis and treatment**, by William Duncan Reid, A.B., M.D., Assistant Professor of Cardiology, Boston University, School of Medicine, Associate in Cardiology of the Evans Memorial, Cardiac Consultant to the Newton Hospital, etc. Second edition, cloth, 466 pages, 81 illustrations: J. B. Lippincott Company, Philadelphia. Price, \$6.00.

This work is divided into five parts: Preliminary Considerations; Types of Heart Disease (Etiologic); Structural Lesions; Functional Conditions (Physiologic), and Treatment. Rheumatic and Bacterial Heart Disease and Cardiovascular Syphilis is fully considered. Tachycardia, Fibrillation and Heart Block are also fully discussed. The work should prove valuable to the internist as offering study of heart problems from both the technical and clinical standpoint, a judicious blending of the two.

**Neoplastic Diseases (Third Edition). A treatise on tumors**, by James Ewing, M.D., Sc.D., Professor of Pathology at Cornell University Medical College, New York City, Third Edition, Revised and Enlarged. Octavo of 1127 pages with 546 illustrations. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$14.00, net.

**A Text-Book of General Bacteriology (Ninth Edition—Thoroughly Revised)**, by Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Octavo of 778 pages with 191 illustrations. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$6.00, net.

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#### TUBERCULOSIS AMONG YOUNG WOMEN

S. Adolphus Knopf, New York (Journal A. M. A., Feb 18, 1928), cites mortality rates of many cities in proof that the death rate of tuberculosis is increasing among young girls. One reporter ascribes the increased mortality among girls between 15 and 25 to the flimsy modern dress, and he thinks that the mortality from tuberculosis among young women would be cut down if dress reform could be encouraged. There is no doubt, says Knopf, that insufficient protection of the body by suitable clothing is in a measure responsible for the contraction of so-called colds due to invasion by *Micrococcus catarrhalis* or the influenza or pneumonia germs. The field for the ubiquitous tubercle bacillus is thus prepared. However, he believes that besides this chilling of the body by insufficient clothing there are other reasons for the increase of tuberculosis among young women. There is first the almost insane desire of so many of them to have a slender figure. To attain a boyish appearance, they will voluntarily submit themselves to actual undernourishment. Very many of those who have fallen victims to tuberculosis have been hard-working employees in factories, workshops or office, with good appetites, but who, in order to lose or not put on any weight, content themselves with an ice cream cone, a cup of coffee or a sandwich at luncheon time, hastily swallowed. They do not make up by a substantial breakfast or a good dinner for what they have missed at luncheon. The result is inevitably a strong predisposition if not the development of a hitherto latent tuberculosis. To the flimsy dress there is added the tightly laced brassiere or wide elastic band, tightly adjusted over the breasts to increase the boyish appearance and the stooping attitude particularly affected by high school and college girls. This posture (college slouch) and the restriction of the respiratory movement by brassiere or band results in an insufficient amount of air entering the upper lobes

and apexes. Excessive cigaret smoking and insufficient sleep because of too much night life are contributing factors not only to the development of tuberculosis but also to other infectious or nervous diseases. The continued compression of the mammary glands may also seriously prevent their natural physiologic development and inhibit their function when the young woman becomes a mother. The increased sick rate among young working women is also due to the fact so many of them work and live in unhygienic environments. Many a catarrh or more serious trouble of the respiratory system has been contracted in the overheated dry atmosphere of office or workroom, the latter in addition often dust laden. To remedy the serious situation manifested by the increased morbidity and mortality of tuberculosis among young people, particularly the girls, reliance must be placed on the family physician, who should do all he can to counteract the foolish desire to grow thin to the detriment of the general health and endurance. He should insist on rational dress according to season and the avoidance of all chest-restricting bands. Annual physical examination of all the members of every family should become an indispensable custom and it is to be hoped that it may become obligatory in the near future. However, an annual examination of individuals between the ages of 15 and 30, is not sufficient. There must be a careful semi-annual health examination if we would wish to decrease tuberculosis among the young persons, and particularly among the girls, where the tuberculosis morbidity and mortality is really alarming.

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# THE JOURNAL

OF THE  
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VOLUME XXI

MUSKOGEE, OKLAHOMA, OCTOBER, 1928

NUMBER 10

## THE PRESENT TREND OF THOUGHT IN REGARD TO KIDNEY FUNC- TIONS AND DISEASES.

L. A. TURLEY

Assistant Dean University of Oklahoma  
School of Medicine  
OKLAHOMA CITY

The literature that has accumulated in recent times with regard to the kidney, its functions and diseases, will make a considerable library and a review of this literature would consume weeks of time. Out of all that has been said and written, there are a few outstanding ideas that are gaining way which seem to be backed up by clinical and experimental evidence. It is these ideas which will be briefly discussed in the following pages.

### FUNCTION

Until recently, it was thought and taught that any abnormality found in urine was due to some fault of the kidney. Therefore, diseases like diabetes, rheumatism, gout, and conditions like uremia were all thought to be conditions due to kidney involvement. Late studies of the chemistry of the blood and some experimental work has shown that in these conditions the kidney plays no essential part and, as a matter of fact, may be quite normal. One of the chief functions of the kidney is to maintain a chemical equilibrium of the blood by removing any excesses that the circulative fluids may contain. So that sugar appearing in the urine simply means that there is too much sugar in the blood and that the kidney in throwing it out is performing its simple and essential function, as above mentioned, in regard to such substances. The process is very similar to that met with in the increasing output of urine at times when there has been an excessive intake of fluids.

In a case of retention of substance; which should be eliminated, such as are met with in gout and similar conditions, three factors must be considered, two of

which have nothing to do with the kidney itself. The first of these factors is that the substance to be eliminated must be present in the blood as a certain definite chemical substance. Whether it is or not depends on the activity of other organs in the body than the kidneys. Many times it happens that these substances either are not properly compounded out of the radicals and esters resulting from metabolism, or they have not been properly reduced from more elaborate compounds, so that the kidney is not presented with the substances which it normally should be and which it is prepared to remove from the blood, therefore these substances are retained in the blood and bring about lesions in other parts of the body or pathological systemic conditions. Second, we may also find that there are pathological conditions in certain tissues of the body which have a tendency to retain or precipitate from the blood stream substances which might be eliminated by the kidneys should they reach the kidney in sufficient concentration, because it is more the excess than any substance *per se* that is eliminated by the kidney. Thus we find the deposits in the cartilages in cases of gout of substances which are usually found in the urine but not in the exact combination they are met with in the cartilages. It is a known fact that cartilages contain rather powerful precipitates for both organic and inorganic compounds. If these precipitates should become abnormal, there would be a tendency to precipitate substances that belong to a given class of compounds instead of just those that are normally precipitated in these parts. As a result, we will find collections of precipitated salts in the cartilages resulting in the characteristic tophi, yet the fault may be in the cartilages, not in the kidney.

One reason for retentions which may be laid at the door of the kidney is the fact of the secretory threshold. In other words, until the concentration of a substance in the blood reaches a certain point, it will not be eliminated by the kidneys. This is

known as the threshold. Undoubtedly there are conditions which arise in the kidneys themselves due to improper nourishment of the kidney cells, or to other factors, which would raise the threshold. In other words, the concentration of a given substance in the blood would have to be much greater before the kidney would begin extracting it than would normally be the case. As a result these substances would be retained in the blood in abnormal and deleterious quantities.

Another factor that plays an important part in retentions in which the kidney is the principal actor is the physiological efficiency of the kidney. That is, the normal, healthy adult kidney has an efficiency of approximately eight times the physiological minimum, or the minimum of function which must be maintained in order that life may continue. Now then, if, through any process, the efficiency of the kidney is reduced, its ability to handle substances in the blood would be lessened in proportion to the reduction of its physiological efficiency. Therefore, in a given case of a kidney which is still able to function, the kidney units may be perfectly normal and able to do their regular quota of work but because of a reduced amount of functioning tissue, the organ would not be able to take care of any excess or eventually of even normal amounts of many substances that should be excreted. It is further quite possible that more than one or all of these factors may be operating in a given case and the point is that the clinician should attempt to determine in a given case of retention which of these factors is operating in a particular instance, and determine the treatment accordingly.

Just how the kidney produces urine is not exactly known. Each year finds another theory receiving the majority of votes, only to be proven inadequate and unsatisfactory and another theory ushered in next year. Up to the present time we can definitely say that no theory yet propounded by physiologists or biochemists has stood or will stand the test of clinical and pathological experiences. There are certain fundamental difficulties which make it next to impossible to settle once and for all the question as to the exact mode of urine production. The chief one of these is that on account of their minute size it is impossible to secure samples of urine from the different parts of a uriniferous unit. Perhaps when physicists have devised canulas of microscopic caliber, physiologists

will then have in their possession an instrument for making these exact determinations. Until that time arrives, we will have to be content with deductions from histological, anatomical, and physiological facts. There are, however, certain things we know about the production of urine and there are certain definite, basic, structural facts from which we can draw conclusions provided we do not blind ourselves by test tube and dialyzing membrane factors.

We know that urine is produced by structural units known as uriniferous units. We know that each unit is structurally divided into four parts which, while connected and forming a continuous tubular structure, nevertheless vary in morphological and histological details, and, since we know that function is dependent on structure, unless we assume that here is an exception in the biological world, there must be four steps to the production of urine. Most of the theories now current give only two. We know that each of these uriniferous units has a double blood supply. That is, the blood which supplies certain parts of each unit has a different origin from that supplying another part of the same unit. This is a fact that physiologists and biochemists have persistently ignored. Since there are four classes of substances found in urine, it is only natural to suppose that each of the four structure divisions of a uriniferous unit would have to deal with a separate class of urinary content. We know also that the uriniferous units work in shifts and that, while some are increasing activity toward the climax of function, others are at the climax, others are decreasing and still others are at rest. These factors have been proven by experimentation and observation from pathological findings. The facts above noted are as far as our exact knowledge goes. Anything further is conjecture. No theory of urine production can be given much credence or weight unless it will explain clinical findings and pathological facts.

#### DISEASES

Barring anomalies and neoplasms, and those conditions due to a mechanical obstruction of the lower urinary passages, the principal pathological conditions met with in the kidney are those connected with the formation of stones and various forms of nephritis.

Kidney stones may be composed of a variety of substances. Right here it might

be interesting to note that all of these substances are not impervious to X-ray. Consequently, the absence of a shadow in an X-ray plate is not conclusive evidence that there is not a kidney stone. All stones are merely precipitated masses of urine content and are due to one or two or a combination of two factors: first, a supersaturated solution; second, an approximate precipitant. This is true regardless of what kind of stone may be present.

Nephritis may be divided into three classes: first, infectious nephritis due to the actual presence and activity of microorganisms; second, functional nephritis due to a temporary paralysis of the kidney either from some abnormal nerve stimulation, interference with the blood supply, or the presence of some paralyzing chemical substance. This form is usually temporary and, although it may be extensive enough to endanger the patient's life, if he recovers, the kidneys will again resume normal function. Third, anatomical nephritis, sometimes also called toxic nephritis because it is usually of toxic etiology, always results in a reduction of the physiological capacity of the kidney by reducing the number of units capable of performing uriniferous function.

Of the three kinds of nephritis above mentioned, the first and third are of greatest frequency and also of greatest seriousness. Infectious nephritis may be caused by a number of different kinds of organisms, including members of the typhoid colon group, the pyogenic organisms, and bacillus tuberculosis. This form of nephritis may be acute or chronic and result in the destruction of a great deal of kidney tissue so that the kidneys may eventually be reduced to below the physiological minimum. However, the symptoms in this type of nephritis are so characteristic and the diagnosis so easily clinched by laboratory methods that no one need long be in doubt as to whether or not he is dealing with an infectious nephritis. It is the anatomical nephritis about which so much has been written and said and which is so little understood by the majority, even of medical men. It used to be thought and still is by a great many practitioners that this form of nephritis usually sets in during the middle or latter part of life and once induced continues a chronic course to death, and therefore has long been considered as an incurable condition. Nothing could be further from the truth. The fact is, however, that by the time the symptoms

of this form of nephritis have become so apparent as to cause the sufferer to seek medical aid, the kidneys are at or near the physiological minimum of function and, therefore, any little extra work thrown on the kidneys from any cause will find the kidneys unable to withstand the extra functional demand and death will ensue. There is one case on record of where this type of nephritis had proceeded to such a degree that it was detected by a surgeon during an abdominal exploration for other reasons thirteen years before the death of the patient occurred or before definite nephritic symptoms had developed. This form of nephritis is due to the presence in the blood stream of excesses of protein analysis and may in fact attack the kidneys before birth or at any subsequent time. We know definitely that it is present during any febrile condition or in any diseased condition accompanied by fever, ulceration, or tissue necrosis, whether from bacterial invasion, burns, or gas asphyxiation. What happens in the kidneys is this: the uriniferous units are affected according to their functional activity at the particular time of toxic showers and that should the patient live, some of these units will be so overcome that they will be unable to regain their functioning condition. Therefore, these units are forever lost to the kidney. These lost units can be found in the examination of any normal kidney of whatever age, so far as years are concerned, the patient may have been at the time of death. Each succeeding condition suffered by the patient which is characterized by excessive protein analysis will result in the loss of additional uriniferous units. Thus it will happen that eventually the number of uriniferous units capable of functioning will have been reduced to the point spoken of above as the physiological minimum. At this time symptoms of chronic nephritis begin to appear. Because the kidney is so reduced, the span of life after the appearance of these symptoms is usually short.

We see a good deal in the literature about chronic parenchymatous nephritis and chronic interstitial nephritis. The condition we are usually dealing with is that chronic parenchymatous nephritis is an acute or subacute toxic nephritis in the kidney whose physiological efficiency has been greatly reduced. The histological picture of the small white kidney (chronic parenchymatous nephritis) is exactly that of a more normal kidney during an attack

of acute parenchymatous nephritis except that the functioning part in the former case is greatly reduced over that of the latter. Chronic interstitial nephritis is simply that the kidney has approached its physiological minimum by the process as above described.

The anatomical nephritis is also sometimes known as arteriosclerotic because in these kidneys we often meet a condition of arteriosclerosis of the intrinsic arteries. Here we have the old question of which is first, the hen or the egg. We know that it is a common process in any part of the body that as the demand for blood supply is reduced, there will be a change in the walls of the blood vessels supplying that part, which will result in a reduction of the caliber of the lumen. As applied to the kidney, if the uriniferous units have been reduced through any cause, the functional blood supply demand will be correspondingly reduced by the process above mentioned. It very often happens that these modified vessel walls are the site of deposits which give the characteristic arteriosclerotic or pipe stem vessel. We also know of the presence of arteriosclerosis in organs where there is no reduced functional demand. Hence, it might well be that this process would occur spontaneously in the kidney. We also know that any reduction in blood supply to uriniferous units will result in the atrophy of the cells and consequent loss of the units so affected. We are inclined to believe that in the majority of cases the arteriosclerotic process is secondary to the nephritic processes, because we know that there is a reduction in uriniferous units beginning very early in life at times and under circumstances in which arteriosclerosis is never met. But, on the other hand, should arteriosclerosis attack the intrinsic nephritic vessels, the conditions similar to those met with in ordinary chronic interstitial nephritis may be found.

On the basis of the more exact knowledge we may have of these kidney conditions, the treatment of nephritis, especially of the chronic type and toxic types, should be modified. For example, any type of medication which is calculated to stimulate the kidneys to greater activity should be avoided and the work of the kidneys lightened by employment of other means of elimination.

## ACUTE UPPER RESPIRATORY CONDITIONS IN CHILDHOOD\*

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Physicians and public health workers now face diseases of the respiratory passages as one of the dominant causes of morbidity and mortality in the early years of life; so it seems opportune that upper respiratory infections, with some possible preventive measures might be considered and discussed in this section, pertaining more particularly to infancy and early life or pre-school age.

Familiarity breeds contempt. There is too much indifference toward the common cold by the medical profession. Perhaps if we designated head colds or common colds as naso-pharyngitis, the laity would be more impressed and feel more constrained to treat the condition with its sequela and complications, as of more serious portent. The common cold is a preface to graver diseases in early life. The anatomical peculiarities of the naso-pharynx and para-nasal sinuses contribute much to the severity of the inflammatory process.

The nasal cavity at birth is relatively long and the respiratory portion is very narrow; thus we see how the lymphoid tissue or so called adenoids add to the obstruction of this passage. The opening of the posterior nares is very small. The eustachian tube is of relatively large lumen and is nearly horizontal at birth, opening at the level of the hard palate, thus lending easy access to the middle ear. The ethmoid is present but has no cells till the fourth year. The maxillary antra are present at birth and may become infected at any age. The mastoid cells do not exist at birth, but are numerous at three years.

### ETIOLOGY OF ACUTE NASO-PHARYNGITIS

(a) Adenoids, often present from birth, are a very important etiological factor in its production. Adenoiditis and ethmoiditis are a part of almost every acute or chronic naso-pharyngitis.

(b) Contact with those already infected, with cough, sneezing, etc.

(c) Exposure to cold, drafts or any condition lowering the surface temperature with a resulting anemia of the respiratory mucous membrane, thus furnishing a more fertile soil for the offending organism of whatever the nature of the infection. No doubt such infections as infantile

paralysis, encephalitis and meningitis find this area easy portal of entry during an acute naso-pharyngitis.

#### SYMPTOMS

Symptoms for the most part are too evident to need detailed description. Nasal discharge; blocking of the nose by swelling of the mucous membrane; enforced mouth breathing with its restlessness, interference with nursing and swallowing produced by the accumulation of adenoids. Temperature 100 to 105, which, by its erratic curve may simulate any disease in infancy.

#### COMPLICATIONS

1. Para-nasal sinusitis is a frequent complication of naso-pharyngitis of which so much has been recently said by Dean and Jeans, of Iowa University, and Marriott of Washington University. These sinus infections acting as a focus in the production of diarrheas, pyelitis, hemorrhagic nephritis, nephrosis, arthritis, etc.

2. Otitis media is frequent, due to the aforementioned anatomic peculiarities in infancy, which is potentially a mastoiditis.

3. Ethmoiditis with its tendency to long persistent coryzas.

4. Maxillary antra involvement which is not infrequent, and may become chronic, affecting distant parts of the body.

5. Frontal sinus involvement, though rare before the fifth year.

6. Laryngitis and bronchitis plus posterior cervical adenitis marks the downward extension.

#### TREATMENT

Put to bed for two or three days during the acute stage, whether it be naso-pharyngitis, bronchitis or both. There are no curative drugs. Aspirin lends to the comfort of the child, and is harmless in appropriate doses. Time honored practice of giving carthartics at the beginning do no good and may do harm.

4. Inhalations of compound Tr. benzoin, and simple local treatment by instillations into the nostrils may be of benefit, and should be used if practical.

If put to bed early and kept there during the acute stage, time is saved and danger of complications lessened.

Last and by far the most important treatment is preventive. It is the object of this paper to stress this phase of the subject. It is through the cooperation of the obstetrician, general practitioner and

pediatrician, the health worker and the education of the public that any preventive measure may be found.

Dr. Edgar Sydenstriker, statistician of the United States Public Health Service, makes some interesting observations relative to prevention and morbidity of respiratory diseases. An editorial in the American Medical Association Journal, April 19, 1928, quotes him as stating that in a house to house canvas by health workers in Great Britain, Canada and America, grouping of diseases showed colds and bronchitis to constitute more than one-fourth of all the ailments reported. The United States Public Health Service showed in a recent survey that in the typical American communities, that respiratory infections lead all other illnesses. He further remarked that this is a "special province of the general practitioner." But certainly it is also within the province of the obstetrician and pediatrician to do something; for the pediatrician is nothing more or less than the general practitioner plus more training in infant feeding and some of the nutritional disturbances peculiar to early life.

Preventive measures should begin even in the delivery room. When I see a new born (of the fatal, first fourteen days' period) with snuffles, head cold or bronchitis I know that the delivery room was cold, the baby was carelessly bathed and allowed to get blue to the elbows or knees, or carried through a drafty hall to be nursed, and perhaps by a nurse with an acute upper respiratory infection herself, all of which is preventable, and the obstetrician is responsible for.

Adenoiditis is so frequent at this age that infants and young children who show a tendency to repeated head colds should have the adenoid tissue removed despite the prejudice to the early operation.

The parents should be taught the dangers of contact with those having head colds and coughs. Avoid the children's parties, crowded picture shows and Sunday school during the prevalence of upper respiratory infections.

The school swimming pools seem to me to be a fertile source for spreading infection to older children who have enlarged turbinates, deflected septa, hypertrophied tonsils and adenoids. And these same children should be guarded from sudden cooling of the body, over exercise, fatigue, drafts, wet feet, etc.

It should be remembered that the well nourished baby who has had a well balanced food, whether artificially or breast fed, has a far greater resistance to respiratory infections, and even if such occurs, more readily reacts against them.

To quote Sydenstriker: to sum it all up—the right time to cure a case of bronchopneumonia, following a common cold, is to cure it while the infection is still a common cold.

With the assistance of the public worker we must enlist the cooperation of the laity by acquainting them with the dangers of respiratory infections and teaching them preventive measures.

The effect of respiratory diseases are often remote and it is hard to correlate cause and effect.

\* That respiratory infections which produce only a mild indisposition in adults may in infancy and early childhood lead to the gravest illness.

In conclusion, it may be said that the problem of the prevention and control of respiratory diseases during infancy and early childhood, while of immense proportions lends itself nevertheless to possibilities that are hopeful. Education of the laity can accomplish a great deal as is shown by the fact that the infant mortality rate and the mortality rate of children under five years of age from respiratory diseases in communities where it has been possible to obtain reliable data has shown a definite and steady decline.

It seems timely that every pediatrician and general practitioner should perfect himself in the management of respiratory ills.

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### THE MANAGEMENT OF LARYNGEAL DIPHTHERIA\*

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Fortunately for the patient, diphtheria usually runs a regular course. The temperature usually is low, the pulse rate unusually fast, the membrane covers the space between the follicles, whether on the tonsil or pharynx, and the patient's color is usually sallow.

Laryngeal diphtheria may start as such or may come secondarily to pharyngeal or bronchial infection. Any croup case that lasts out the night should be viewed

with suspicion, whether the membrane is in sight or not.

As the membrane fills in the larynx, there is also an element of spasm in the dyspnoea, and for that reason emetics will occasionally give temporary relief, but these cases do not entirely clear up with ipecac.

Given a child between the ages of one year and ten, with slight sore throat for a couple of days then, a day of hoarseness which continues, low temperature and fast pulse, generally above 110, and sallow color, it should be treated as diphtheria, regardless of cultures or whether membrane is in sight or not; however, usually it will be visible.

As to the amount of antitoxin given, there are three factors that determine the dose, i.e., the younger the child, the larger the dose; the longer the infection has been present and therefore the sicker the patient, the larger the dose, and the more laryngeal the larger the dose. For example: a child two years old with laryngeal diphtheria four or five days old will need not less than 50,000 units to get the best results, whereas, a child of ten with pharyngeal diphtheria of three or four days standing will get well just as certainly with 30,000 units.

As to the method of administration, intravenous serum will begin to help in about four hours, intra peritoneal serum will help in about eight hours and intra muscular therapy in about twelve hours. In laryngeal cases, I believe the method of choice is the intra peritoneal route because then a large amount of normal saline solution can be given at the same time, which usually tides them past the highly toxic state until the serum has had time to work.

Now as to the emergency aspect of laryngeal diphtheria, I have reached several definite conclusions: First, if the baby is not too toxic, intubation should be done, always having a tracheotomy set ready in case the membrane rolls up and plugs the tube. Second, if the patient is extremely toxic, tracheotomy should be done with local anesthesia and as rapidly as possible. There is less shock and considerably less danger to the patient from a tracheotomy than from intubation. Also the less skilled one is in intubating these patients, the greater the hazard.

The physiology is this: due to the dyspnoea, apnoea, and anoxemia, the carbon

dioxide collects in large amounts in the blood, P. H. rises and a stimulation of the respiratory centers occurs, all the accessory muscles being brought into play. Toxemia and acidosis increase with the resulting fatty degeneration of the myocardium. The patient has no reserve oxygen in the tissues or blood, and the respiratory centers are stimulated to their utmost. When the intubation begins, the finger is placed on the epiglottis, and there immediately occurs a reflex spasm of the laryngeal muscles, stopping any further respiration. The tube must then be inserted quickly between the spastic swollen cords and on down through the larynx, thus overcoming the spasm, and providing an air way. If everything goes well, the patient only holds his breath about five to ten seconds. During this period of apnoea, the respiratory centers become over-stimulated throwing all the muscles of respiration into tonic contraction. If not relieved this ceases after two or three convulsive attempts at breathing. The heart, however, usually continues to beat for about one minute more, then stops, due to anoxemia, toxemia and fatty degeneration.

Therefore, if the patient is too dyspnoeic and too toxic to hold his breath more than 10 seconds, tracheotomy should be done at first. No intubation should ever be done without a tracheotomy set ready and open. If the patient quits breathing, due to obstruction by the membrane then do tracheotomy, if from apnoea only, then continue the intubation and give artificial respiration.

In these cases lobelin, adrenalin or other quick stimulants do not help since the respiratory centers have already been stimulated to death. Only oxygen will help, either through the intubation tube or the tracheotomy tube.

Having arranged so that the patient can breathe, the proper amount of antitoxin should be given in the peritoneum with as large amount of normal saline as he will stand.

The intubation tube should be removed in 48 to 72 hours, being ready again to replace it or do tracheotomy if the loosened membrane around the tube chokes him up. Usually, however, when the tube is removed the patient will cough up at the same time a cast of the larynx and have an uneventful recovery from that time.

The tracheotomy tube should be removed in 48 to 72 hours and the neck wound not

closed. This stays open about three or four days longer and gives him an emergency air-way until all the membrane is out of the larynx. In ten days, this neck wound closes and the patient is well. They should all be kept in bed two weeks after their antitoxin to lessen the chance of paralysis and give the myocardium a chance to repair itself.

### FOREIGN BODIES IN THE AIR PASSAGES\*

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In a recent review of peroral endoscopy Clerf calls attention to the increasing frequency of the employment of laryngoscopy, bronchoscopy and esophagoscopy as aids in diagnosis and treatment of disease. These procedures cannot be properly carried out by a mere neophyte suffering from egotism as the result of an infrequent visit to some reputable clinic. Jackson states that when skillfully introduced, there is no danger from the mere presence of a bronchoscope in the air tract. Introduction of instruments in the air and food passages by the untrained hand may inflict fatal trauma; even though dangerous and difficult the technique may be taught any physician or surgeon.

In order to obtain good results in the practice of peroral endoscopy one should have a team of trained workers. The question of time is ever important and the delay caused by petty annoyances resulting from poorly trained assistants may prove fatal to the innocent victim who seeks the master's skilled hand for relief.

The proper care of the patient before and after operation must be considered in every case. The condition of the patient must be considered in some cases, however, there should never be any contraindications to the removal of a foreign body from the food or air passages.

Foreign bodies in the food and air passages are common misfortunes usually resulting from accidental aspiration or swallowing. Due to the progress in diagnoses, foreign bodies are now found where formerly none had been observed. In some instances foreign bodies remain undiscovered for a long period of time and prove to be the cause of many complications.

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

The value of a good history in this type of work cannot be overlooked as the symptoms of gagging and choking frequently prove to be the essential factor in a very complicated case whose present complaint refers to some distant region. Patients who give a history of choking and gagging should be considered as foreign body subject until proved to the contrary. The history relating to difficult breathing associated with or without pain, may prove to be a valuable lead in discovering some forgotten and obscure foreign body in the air tract.

The symptoms of foreign bodies in the air passages are very elusive and vague. This, no doubt, accounts for the fact that foreign bodies are frequently overlooked and not found until some grave complication has developed. Although the aspiration of metallic foreign bodies may be followed by a symptomless interval, the experience of most workers is that some form of irritation is set up immediately. Unfortunately there is often a period between the time of accident and the occurrence of symptoms that prove detrimental to the patient. During this period of time weeks or months may elapse and the original accident be forgotten until the discovery of the foreign body in searching for the cause of the complication.

The customary symptoms of foreign bodies in the air passages are those of obstructed breathing or irritation and inflammation. There is usually a history of choking and coughing, however, this is not obligatory. The physical signs are those following obstruction and must be very carefully studied. In certain cases there is no obstruction, such as a common pin in the bronchus. Foreign bodies of vegetal origin in children often produce systemic reactions simulating pneumonia and bronchitis.

In the diagnosis of foreign bodies the history, physical findings and roentgen ray studies should be thoroughly studied. All subjects with obscure chest signs should receive the benefit of a roentgenray study as innumerable foreign bodies have been discovered in this manner.

Due to the fact that signs and symptoms of foreign bodies often simulate those of common diseases such as pneumonia, bronchitis, empyema, abscess, bronchiectasis, asthma and tuberculosis, the practitioner is prone to jump at the outstanding symptoms as well as the most conspicuous physi-

cal findings. Unless the possibility of a foreign body is considered in every case of pulmonary disease many foreign bodies will be overlooked.

The diagnosis of nonopaque foreign bodies in the air passage is frequently complicated and difficult. The excellent work of Manges shows that the outstanding changes are obstructive emphysema of both lungs with depression of both sides of the diaphragm and rotation of the heart with diminution of its transverse diameter at expiration. This diminished diameter can be definitely ascertained by actual measurements of the heart shadow on films exposed at the end of inspiration and expiration.

Wright reports the interesting case of a child, aged 2 years, who was admitted with a diagnosis of suspected laryngeal diphtheria. There was stridor and an asthmatoïd wheeze, with physical signs of consolidation at the base of the right lung. A diagnosis was made of bronchial obstruction, probably of foreign body origin. When bronchoscopy was performed, a fragment of nut was found in the bronchus of the right lung. The recovery was uneventful and the diagnosis of diphtheria was not confirmed.

Foreign bodies in the air passages should be removed as soon as possible as they may become dislodged and migrate to more dangerous locations. The possibility of irritations by the foreign body causing edema, pneumonia and other lesions, should warrant the early removal of the offending member. Because one foreign body remains in the bronchus for years without causing any symptoms does not mean that all subsequent cases will terminate so favorably.

The common custom of beating the patient on the back, coughing and holding the head downward cannot be recommended as many foreign bodies are dislodged by such methods and immediately land in other locations less favorable to their easy and rapid removal. Many foreign bodies in the air passages have been dislocated by unnecessary movement of the patient and the resulting complications such as complete obstruction call for radical interference such as emergency tracheotomy.

Removal of foreign bodies from the trachea and upper air passages is relatively simple provided one has the necessary armamentarium. The removal of foreign bodies from the bronchi is more compli-

cated and requires more effort on the part of the operator.

The technic or removal is that with which the operator is more familiar. In the hands of some the Killian method is preferable whereas others prefer the technic of Jackson, and others prefer the suspension method of Lynch.

In the opinion of the writer foreign bodies in the air passages require detailed study comprising a good history, complete physical examination, thorough roentgen-ray study and removal at the earliest moment by the technic best suited to the individual case.

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### CHRONIC PURULENT OTITIS MEDIA COMBINED TREATMENT\*

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The first thing to decide is why the condition is chronic. Is it due to poor drainage through the drum membrane, due to the location of the hole in it—being either too high or too small—or due to blocking by granulations or to diseased cells in the mastoid or to the lack of proper drainage and ventilation through the eustachian tube or naso-pharynx.

First, I will say that I do not believe that we do either ourselves or our patients justice when we make up our minds as to the cause of an otitis from the examination of the external ear alone because there are causes that are not revealed by this kind of examination.

This is, however, the most important examination to be made, but we should know the bacteriology of the discharge and sometimes the X-ray will help in at least excluding some bony involvement, or complications.

The naso-pharyngeal examination is a most important part of our examination, including tonsils, teeth, and proper ventilation through the nose.

Many divide the causes of otitis according to the location of, or size of, the hole in the drum membrane and the number of

perforations are considered. Those who make this division make four divisions as follows: (1) large low perforations—probably the least dangerous of all, (2) small perforations high up which are probably the most dangerous of all as drainage is poor and discharge is apt to be foul and offensive and—if long continued—to be complicated by granulations or necrosis or other bony changes, (3) peripheral perforations are considered to be an indication of necrosis of the bony canal not far from the drum membrane, (4) multiple perforations are an indication of tubercular origin or—if near ossicles—necrosis of them. The fifth, which I am adding, is, in my opinion, the most important of all. (5) Lack of proper drainage and aeration through the eustachian tube, which is most often due to disease or obstruction by adenoids or tonsils, the latter of which of course are never directly obstructive, but act so indirectly. Hypertrophies and deviations are also a consideration.

This is probably not a proper classification for it would be more nearly correct to classify them all under one head and call them due to poor drainage. However, there are other contributing factors such as systemic conditions, sinus infections and diseased tonsils and adenoids. Our dental friends are sure that many of our ear conditions are due to septic conditions in the mouth and teeth.

In outlining our treatment we should take into consideration our patient's age and the length of time the ear has been discharging. Sometimes we are mistaken and a supposedly chronic ear dries up after a few treatments. Sometimes we are obliged to compromise and use second best methods instead of what we consider best. My object in choosing this subject was that I might say something of the newer forms of treatment. Formerly treatments were classified under three heads as follows: (1) local, (2) intratympanic operations, (3) the so-called radical mastoid operation. I am adding a fourth. Electrotherapy deserves a place or trial before the radical operation is done. I personally would want it tried before I would consent to a radical.

Treatment under the first heading is so well known and varies so much that it would be a waste of time for me to attempt to suggest to you distinguished gentlemen any additional treatment. I confess to you that I have nothing new or startling in the way of local treatment of this common

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

condition. However, I so often sit in meetings and wish that you successful men would tell us more of your ordinary routine for treatment of every-day diseases, and for that reason I am going to mention some very ordinary measures in my routine and hope that by so doing I may induce at least some of you to do the same in your discussion. The first thing that I do in these cases is to see that the hole in the drum membrane is large and low enough for good drainage and, if it is not, make it so. Secondly, I set about to secure the proper drainage through the eustachian tube. I do not think that douching is good or safe treatment for the patient to use at home. I find that boric acid will dry up many cases but is liable to cake if blown into the ear too often. It also frequently causes excessive granulations to appear and these in turn must be removed or destroyed. The gauze is helpful provided the discharge is fluid and care is taken that we do not pack in a manner to be obstructive to drainage. It should be left off as soon as the discharge becomes albuminous andropy for at this stage it surely becomes obstructive and does harm. Cleaning with a cotton applicator and some disinfectant (alcohol, formalin and cyanide of mercury in water) is my usual method. Then, I unhesitatingly force a solution of acrid violet through the middle ear and eustachian tube into the nasopharynx.

Most drops do little good unless the middle ear is thoroughly emptied by suction and cleansed before using. No doubt some of the newer drugs do more good than our old time phenol-glycerin. Ether treatment has not proven effective in my hands and is painful.

Intratympanic operations we do not do often enough probably because they seem oldtimey, but I believe we are coming back to them and rightly so.

Radical operations should be done only after we have failed with all other measures as such operations mean the destruction of the ear. They will be less frequently used as more of us become familiar with the electro-therapeutic measures which I am adding under the fourth classification.

Zinc ionization is not suitable to all cases and especially not in those instances where there is bony involvement or chole-

teatomatous masses. Neither is it suitable for the treatment of children as it is to say the least disagreeable and they are afraid of being hurt and usually are on account of their failure to be still. I do not believe that small perforations are a contraindication to its use, nor do I believe that the effect is limited to the area covered by the solution placed in the ear. If that were true there would be no reason for using the electric current in it. The best method for this procedure is as follows: After cleansing place the ear to be treated up and fill the canal with a 1 per cent solution of zinc sulphate and place in the ear a zinc electrode insulated with a bulb tipped glass tube which should be connected with the positive pole of a galvanic battery. The negative pole should be placed in a pan of salt water, in which patient places one hand. This makes it more comfortable than a pad. The current is turned on slowly and allowed to run up to two or three milliampeers and continued for ten minutes.

Another of the newer treatments—the using of which exposes me to the classification of fadist—is the ultra-violet ray. I use a quartz rod applicator in the ear and also in the nose for its shrinking effect in the nose. The nasal applicator is insulated with a rubber tube so that only about three-fourths inch of the rod is exposed. I insert this rod into the nose as far as the opening of the eustachian tube and allow it to remain for about one minute, withdraw a short distance and allow to run for a half minute and finally, with the applicator in the front of the nose and high up, allow another half minute. I heard Dr. Harold Hays say last summer that they are using the violet ray in their clinic and that with it they are stopping these ears from discharging. He also said that it is useless to try to clear up these cases as long as there remains even small pieces of tonsils or adenoids.

A mistake we often make is to assume that the patient is perfectly well except for the local infection in the ear. We should remember that we are treating an individual, and not simply an ear.

And keep in mind that the most and best that we can do is to bring about good drainage from the ear and aeration through the nose.

## EVISCERATION WITH GOLD BALL IMPLANTATION\*

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TULSA

The reason for this contribution is that we take cognizance of a superior surgical technic which should, in the majority of instances, replace enucleation, a quite unsatisfactory operation when considered as to its cosmetic, and, hence, as to its economic results.

The enucleation of the eye is a rapidly and rudely performed procedure, and generally gives the impression that the sole aim of the operator is to get the offending member out. The muscles attached to the eye are cut, the optic nerve is severed, the eye delivered and hemorrhage controlled by pressure—this nonesthetic and purely mechanical procedure is the accepted performance, and it constitutes the operation of enucleation. Any nicety of technic aimed at obviating disfigurement is very generally ignored.

When the prosthesis is inserted, following this crude surgical procedure, three highly unsatisfactory conditions, to say the very least, are almost surely present. We have an artificial eye sunken deeply into the socket, with a consequent lack of symmetry with the natural eye; we have sagging lids, and we have an eye staring rigidly and vacantly into space. Injury to the sympathetic incident to the operation of enucleation has been considered as a probable factor to account for these unsatisfactory conditions; but, in addition, there are primarily some purely mechanical factors worthy of note: (a) the deeply sunken artificial eye can be attributed to the practically empty socket resulting from enucleation; (b) the sagging lids to the disturbance in relation between tension of, and pressure against, the palpebral muscles caused by the sunken prosthesis, and (c) the rigidly staring eye results from the severed recti muscles.

These deformities can be avoided. Hence we can improve upon what is undoubtedly a faulty surgical procedure, however skillfully it is performed.

Enucleation may be compulsory in malignant conditions of the eye, or justifiable, as in advanced age, where appearance count for little as against the necessity for a rapidly performed operation; but it is not justifiable in any one other single condition.

The laudable efforts of our government to rehabilitate the injured and disfigured soldier, and to restore him to a condition where he can most readily earn his own livelihood, should teach the lesson that the removal of the eye in civil practice should not be considered on a parallel with the emergency operation of the battle field that so often makes necessary later plastic treatment.

The civilian surgeon also is today removing postoperative disfigurements solely with the view of a cosmetic improvement; and much of this plastic surgery would not be necessary had the patient been rationally handled in the first place. Yet, with respect to eye surgery, or to that part of it under consideration, very little is being done to preserve a normal appearance; and we must admit that a good appearance has no inconsiderable economic value.

Postoperative appearances are to be shown every consideration, and we must use the utmost care in preventing any avoidable disfigurement consistent with the welfare of the patient. Evisceration with gold ball implantation according to Dimitry is advocated for the reason that it practically obviates injury to the sympathetic nerve, conserves the normal movements of the eye, provides a foundation for the prosthesis, and hence a filled-in socket, all tending to prevent disfigurement, and in that it exposes the patient to no greater risk from sympathetic ophtalmia than does enucleation.

The advocated operation is an evisceration of the sclera with the removal of a section of it *posteriorly* including a severance of the optic nerve. A gold ball is inserted within the sclera, and the anterior opening is closed. The posterior opening is not closed. This latter is very essential, and a little thought should convince one of its merits.

The procedure begins as in an evisceration; that is, the conjunctiva is first un-

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

dermined, and the anterior aspect of the globe is resected. The point of resection

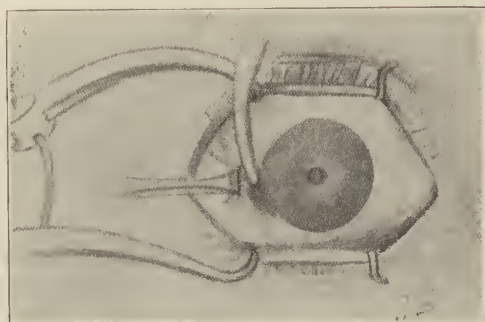


FIG. 1 AND 2.

is about 2 mm. posterior to the corneoscleral junction. The contents of the globe are removed, and any possible slight hemorrhage is easily controlled. A section is made in the posterior aspect of the sclera from within, and, at the same time, the optic nerve is severed.

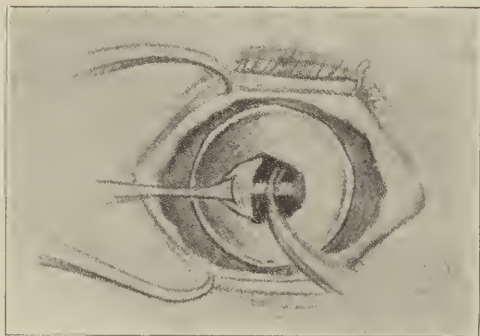


FIG. 3.

This latter procedure is quite readily carried out by puncturing the sclera with a Graefe knife, and with a pair of curved scissors cutting in a circle around the insertion of the optic nerve, thus severing it

from the sclera. The detached portion of the sclera with its attached portion of the nerve are then removed after section of the latter. The long ciliary nerves may also be cut if desired.

The sclera is now turned from within outward, evaginated, and every vestige of choroidal tissue is removed. It is then returned to its normal position, invaginated, and two small triangular sections of it removed at both sides of the anterior window and in such position that a vertical line bisecting the latter will also bisect the triangular openings. The gold ball is then inserted, and the sclera is sutured vertically over its anterior surface. The

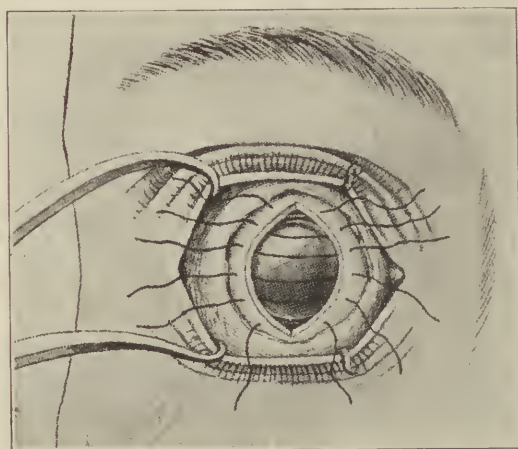


FIG. 4.

conjunctiva is sutured horizontally over the sclera. The operation is now complete.

The triangular openings are for the purpose of securing a more snug fit of the sclera over the ball. The recti muscles, having been left attached to the sclera, retain their ability to function; so that, what remains of the eye, with its implanted gold ball, is capable of practically the same scope of movement as was the eye before operation.

Considerable reaction and swelling usually occurs after this operation, thus subjecting the tissues to great strain. This edema encourages a loosening of the sutures. To combat this tendency Fox uses what he calls a "conformer", made either of glass or gold plated silver. It is shaped to the contour of the eye, is either solid or perforated in its center, and acts as a splint to support the sutured scleral and conjunctival wounds. I have used the con-

former in a number of cases and can endorse Fox's claims.

A perfectly dry, antiseptic dressing is preferred. A pressure bandage is applied over both eyes to support the sutured wounds and promote immobility of the operated eye. It should remain in position for about two days and may be slightly loosened if the pain and swelling are great. It may be necessary to give anodynes and the patient should be kept quietly in bed for the first few days. The stay of the patient in hospital is somewhat longer than after an enucleation. The bandage may be removed in about two days and the con-former in three or four days, but the stitch should not be removed for about a week as the conjunctival wound is apt to gape if the sutures are removed too soon.

The questions of sympathetic ophthalmia and extrusion of the gold ball will now be considered. The two most widely accepted hypotheses to account for sympathetic iridocyclitis are perhaps that of Leber and Deutschmann, and that of Rimpler.

If the former theory is correct, and sympathetic ophthalmia is due to the infectious virus reaching the sound eye by way of the lymphatics of the optic nerve unless the retained sclera is the focus of the infection, which is extremely improbable, the advocated operation protects from this untoward eventuality to the same extent as does enucleation, for the optic nerve is severed.

Those who are partial to the cilioneural theory of Rimpler, that an irritation of the ciliary nerves of the eye first affected induces a susceptibility to the disease in the sound eye, will find it not difficult to sever these nerves at the same time the optic nerve is severed.

The erroneous impression which prevails is that sympathetic ophthalmia is likely to occur after this operation. This notion is incorrect for, although it is not denied that sympathetic ophthalmia may follow this operation, it is frequently difficult to prove that the operation caused the disease since it might have followed some other form of enucleation. Fox (*Diseases of the Eye*, 1910) had done four hundred and twenty-five gold ball operations in fifteen years and had never had a case of sympathetic ophthalmia.

The idea prevails that very few balls remain in situ, but this is only true

where the operation is poorly performed; if done in accordance with the directions set forth here, very few balls will be expelled. If balls are expelled, it occurs in a short time after the operation, although instance of extrusion some years after are on record. If even a small opening occurs at the line of suture, exposing the ball, its total expulsion is inevitable.

An unfortunate blunder is to select an overly large ball thinking thereby to secure an increased cosmetic effect. The sclera contracts a great deal after this operation and if a ball is selected which is a "tight fit" the wound will be quite likely to open and permit its escape. The ball should be so small that the sclera wrinkles over it instead of fitting tightly. If a small ball be selected and plenty of delicate but strong sutures are used, which are placed far back in the sclera, it will be exceedingly unlikely to escape.

Fat is quickly absorbed, as is the eye of the rabbit, although not so rapidly. Paraffine and dental wax have given the poorest results, for they, and particularly the latter, cause a great deal of irritation. Cartilage, barring the great difficulty in procuring pieces suitably shaped for the purpose, seemed to give rather satisfactory results. However, I can see in its use no advantage over the gold ball; in fact, rather the contrary.

In further defense of my stand, I shall quote from Allport, in the *American Encyclopedia of Ophthalmology*, under the caption of *Choice of Methods in Eyeball Excision*: "In the majority of cases this mutilating and deforming operation of enucleation is entirely unnecessary and should be relegated to obscurity, that it may make way for better, more modern and more humane surgical procedures."

In conclusion, the advantages of the operation may be summed up as follows:

1. It furnishes a filled-in socket with its several advantages; a firm seat for the prosthesis; an absence of sagging lids, and hence, a normal lacrimal secretion and drainage.
2. It evidently does not interfere with a natural face development in the youth.
3. It leaves the recti muscles undisturbed and with an unimpaired power to function.
4. The posterior window permits of the easy severance of the optic nerve; it permits of ready absorption of hemorrhages

and exudates, and obviates extrusion of the gold ball.

I have done about fifteen of these operations with uniformly good results.

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### ASEPTIC CAVERNOUS SINUS THROMBOSIS\*

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OKLAHOMA CITY

Two years ago, before this section of the Oklahoma State Medical Association, the writer discussed "Lateral Sinus Thrombosis." The paper was presented without manuscript and a brief was not prepared so the discussion was not received for publication by the State Medical Association Journal. At that time, after several years of observation, we endeavored to present our conclusions which were, we believe, not generally accepted. Namely: (a) All lateral sinus thrombi are aseptic during the early formative period. (b) Lateral sinus thrombosis does not come as the result of infecting micro-organisms passing directly into the lateral sinus or from an infected embolus entering the sinus by way of the superior petrosal or some other communicating vessel.

We endeavored to show that a thrombus was the result, rather, of extension by contiguity of tissue. Following inflammatory processes within the temporal bone due to infection, the membranous sinus becomes surrounded by inflammatory tissue and frequently lies in a pool of pus. As a result of this contiguous inflammation the vein becomes involved, causing the intima of the vessel to throw out a sticky exudate which picks up the red and white blood corpuscles and other blood contents, forming an aseptic thrombus. If the pus is not removed by prompt operation the vessel walls soon soften and the surrounding bacteria readily penetrate them and we get an infected thrombus so that our patient presents a new syndrome and the blood picture is that of bacteremia. If at this time the case is still left unoperated the infected thrombus

begins to break down and your patient develops a third distinct stage and the symptoms and blood picture are those of septicemia.

We endeavored to urge the importance of recognizing and operating these cases during the first stage, namely that of the aseptic thrombus, when we may expect practically 100 per cent of recoveries. If we do not recognize this condition early, but operate during the second stage, namely that of bacteremia, we may expect only 50 per cent of recoveries, whereas if we delay operation until the third stage or that of septicemia our mortality is practically 100 per cent. As an aid to diagnosis, daily blood cultures should be made in all cases of mastoiditis.

Those of you who have studied thrombi carefully in their gross appearance must have noted them occasionally during this aseptic stage. They are clean cut, well moulded structures very firm and adherent to the inner wall of the vessel, almost like an outgrowth from the intima. They are red, dark pink or pale pink, dependent upon the proportions of the white to the red blood corpuscles they contain. Microscopical examination does not reveal any bacteria in these thrombi during their formative stage.

Unfortunately we see all too few lateral sinus thrombi at this stage because of our tendency to delay operation, or if we do operate a mastoid we so often fail to expose the lateral sinus and hence the life of the patient may be seriously jeopardized if not wholly sacrificed.

As a result of the studies which led to the above discussion we were able to make our deductions in the interesting case which we wish at this time to report and which at our June, 1927 staff meeting at the University Hospital we ventured to call an "Aseptic Cavernous Sinus Thrombosis." More than four months later, in the September, 1927, number of *The Archives of Otolaryngology*, the official Ear, Eye, Nose and Throat Journal of the American Medical Association, Dr. M. C. Myerson of New York City, presented a similar case which he calls an "Aseptic Cavernous Sinus Thrombosis" and states that he is "not certain a case has ever before been recorded in which the process was aseptic apparently from its inception."

On May 3, 1927, the following case presented itself at the University Hospital.

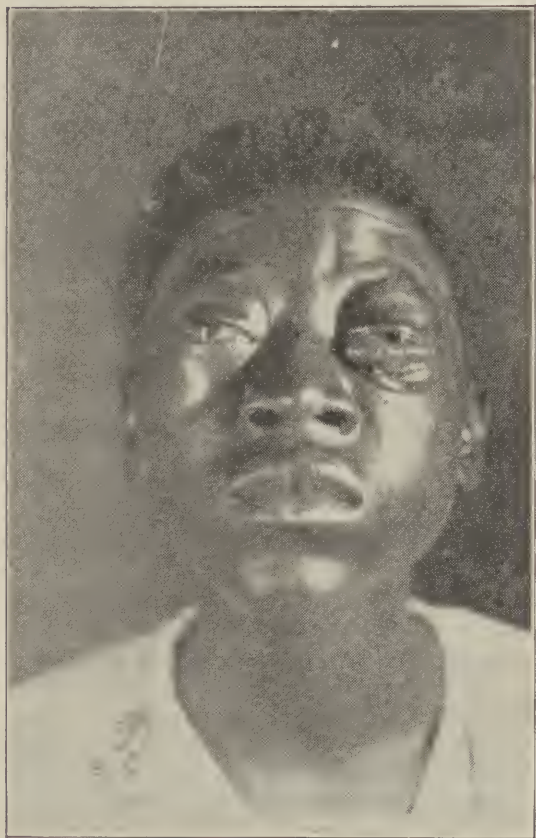
\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 17, 18, 19, 1928.

R. S., colored, male, school boy, age 15 years, apparently perfectly well until one week prior to this date when he began to have some pain with a very rapid swelling and effusion of the left eye and orbit. He complained of no other symptoms.

The observations of the admitting physician, Dr. R. Brady, were "swelling of tissues about the left eye and lids, redness of conjunctiva and purulent discharge from the eye."

Impressions of admitting physician as to the nature of the case were cellulitis of the left orbit.

The history and physical findings taken by Dr. E. Veatch were entirely negative except as related above, namely a rapidly swelling and inflamed left eye beginning seven days prior to admission into the hospital.



NO. 1.

Photo taken one week after entering the hospital.  
Note the marked chemosis in the left eye.

The case was referred to the ophthalmological service and Dr. E. S. Ferguson's

consultation report upon the case was as follows:

Right eye: About normal in appearance, media all clear and fundus shows no pathology. There may be slight exophthalmos.

Left eye: Marked exophthalmos with conjunctival edema. The appearance suggests cellulitis but there is a complete absence of pain which would discount this opinion. Media clear, nerve head very indistinct with probably some exudate at its center presenting slight choked appearance. Unable to say what is causing disturbance without further study. May be cavernous but history hardly bears it out. Cellulitis from an infection should be more acute. Intracranial pressure of some sort must be considered. Advise close observation.

Dr. L. M. Westfall on service in the ophthalmological department called for a nose and throat consultation with special reference to a possible infection from the accessory nasal sinuses.

Dr. J. C. Macdonald of the Rhinological department, who was assisting me at this time in my service at the University Hospital, made the following observations May 7, 1927:

Right eye: Some exophthalmos, conjunctiva congested and edematous, movement of eyeball somewhat limited. Vision apparently good.

Left eye: Marked exophthalmos, eyeball pushed forward and rotated downward, only slightly movable.

The X-ray shows fluid in frontal sinus, but as the sinus lights up well upon transillumination, this is to be questioned.

Impressions: Orbital cellulitis, bilateral. Dr. Macdonald asks an opportunity for further study.

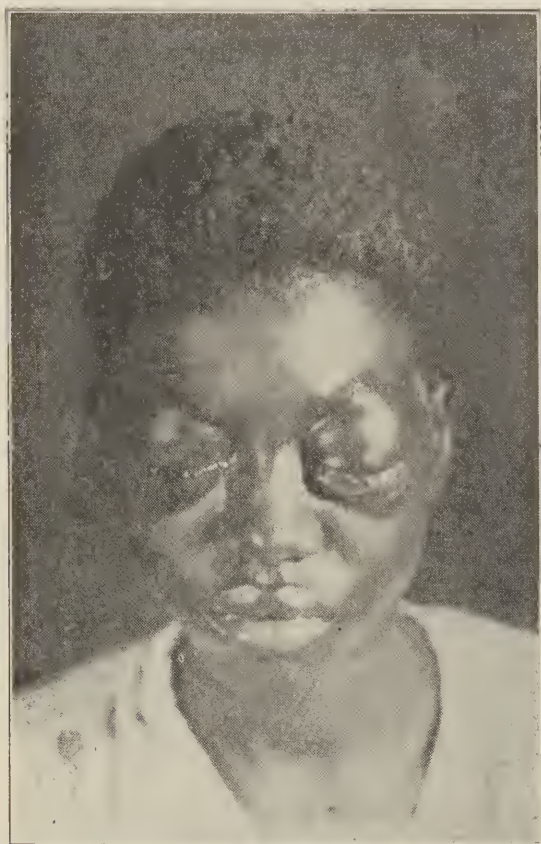
On May 9, 1927, he makes the following record: Tissues of nose shrunk with adrenalin. No pus is seen in either nasal cavity.

Dr. Macdonald kindly asked me to see the case, which I did on May 11, 1927. At this time we made the following notes:

Condition and appearance of patient remains as already described. This is probably a *Cavernous Sinus Thrombosis*. Patient examined rather hurriedly. Extension from the nose has evidently been eliminated. It is probably a low grade mild type of infection involving the cavernous

sinus. We think the continued careful observation of the case important with as near as possible a positive elimination of the accessory nasal sinuses.

On June 8, 1927, we made the following notation regarding the case: The condition of the fundi are not changed since first seen, which, by the way, evidently had shown marked engorgement of both discs except that the veins may be more swollen and the arteries, especially in the left eye, very indistinct. Both eyes still markedly bulging but the exophthalmos and chemosis is much more extreme in the left eye. This we contend is probably due to a low grade infection of the left sphenoidal sinus, causing an *Aseptic Thrombus of the Cavernous Sinus*. This may become septic at any time presenting serious complications or it may clear up by absorption.



NO. 2.

Photo taken about two weeks after entering the hospital. Note conjunctiva protruding below margin of closed lids of left eye.

The outstanding features in this case and those upon which our judgment in diagnosis of aseptic cavernous sinus thrombosis was based, were:

The history of a rapidly developing bilateral exophthalmos more marked in this instance in the left eye, attended with little pain but marked redness of the conjunctiva with engorgement and chemosis.

Evidence of intracranial pressure as shown by a slow, full pulse, 52 to 56, and the enormously engorged veins in both fundi indicating an obstruction to the venous circulation in both eyes.

Total absence of fever or other signs of sepsis, the red and white blood count remaining practically normal throughout according to the laboratory reports.

These cases evidently tend to recover without surgical interference. Dr. Myerson's case recovered after seven months.

It is our opinion, however, that if the intracranial pressure continues pronounced as evidenced by the slow, heavy pulse and the intense engorgement of the retinal veins, a subtemporal decompression should by all means be done to lessen the danger of blindness from intracranial pressure upon the optic nerve. J. V. Paterson, F.R.C.S. of the Royal Infirmary, Edinburgh, in a recent article on "Optic Neuritis," says, "I would support the view that cases of increased intracranial pressure with changes at the disc should be operated upon early so that the patient may have the best chance of retaining vision. A. J. Bal-lantyne, M.D., of the Western Infirmary of Glasgow, Scotland, and Henning Ronne, M.D., of Copenhagen, also made the same claims in recent published articles.

As consultant, we recommended that a sub temporal decompression be done in this case. The ophthalmologist in charge concurred in this opinion and referred the case to the surgical department. Dr. Le-Roy Long, who was on service, did this operation on May 18, 1927. The case was fully recovered in seven months as the accompanying picture will show.

Dr. Myerson's case recovered, apparently, without loss of sight and was not operated. The doctor does not state, however, whether his patient showed any evidence of intracranial pressure. He does not tell us the character of the pulse nor the condition of the fundi. Several of our best authorities state that when the pulse remains above 55 or lower due to evident intracranial pressure and the optic disc shows marked disturbance, a subtemporal decompression should always be done. We are inclined to believe that such an opera-

tion had much better to be advised than to risk the possibility of partial or complete blindness.



NO. 3.

Photo taken about eight months after first entering the hospital. Note perfect normal appearance of both eyes.

How do we account for such a case as this? We believe the etiology as based upon our discussion of thrombosis two years ago will explain these conditions. This patient undoubtedly developed first a mild infection of the sphenoid, sufficient to cause an inflammation of the contiguous cavernous sinus. The intima of the cavernous sinus throwing out sufficient exudate to pick up the red and white blood cells and blood platelets to produce a thrombus. Fortunately the sphenoidal sinus has a rather large opening for natural drainage, and in case of infection always tends to a spontaneous cure. Resolution took place, therefore, naturally in the sphenoidal sinus before the infection had broken down the membranous walls

of the cavernous sinus to permit the bacteria to infect the thrombus. Such good fortune is quite impossible in lateral sinus thrombosis from purulent mastoiditis, but should be accomplished quite readily in a cavernous sinus thrombosis through the natural drainage of the sphenoidal sinus.

From our observation of this case we believe, however, that the safety of these patients could be greatly increased by promptly using some intranasal treatment that would favor natural drainage of the accessory nasal sinuses, such as keeping the nasal mucous membrane shrunken with a 1 per cent solution of ephedrin or one to 1000 adrenalin chloride, followed by a gentle and persistent intranasal application of a hot alkaline douche.

The pictures which we present with this case tell us more at a glance than pages of descriptive writing can possibly do, especially as to the appearance of a patient with cavernous sinus thrombosis.

We wish to express our thanks to Dr. L. M. Westfall on service in the ophthalmological department and Dr. J. C. MacDonald on the clinical service in rhinology and otolaryngology for having the laboratory department take these excellent photographs. X-ray and all other laboratory findings remained practically negative throughout the entire illness. The temperature remained nearly normal, whereas the pulse, prior to the decompression operation, was often below 55 per minute.

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For a further study of this case see the filed records, University Hospital, Oklahoma City, May 3, 1927, Case, R. S., Cavernous Sinus Thrombosis.

## THE TRANSPORT MECHANISM OF THE ALIMENTARY TRACT AND ITS SIGNIFICANCE IN CONSTIPATION AND OTHER INTESTINAL DISTURBANCES\*

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None of the basic facts in the science of medicine are more confused than are those about the visceral nervous system, and particularly as it concerns the gastro-intestinal tract. Depending upon the school to which he adheres the physiologist talks very glibly about the autonomic nervous system, the sympathetic, the para-sympathetic, and the vago-sympathetic, and not so long ago we heard of the pneumogastric system and more recently it is the visceral or vegetative system.

To me these various descriptive terms indicate that our knowledge of the physiology of the nerves to the viscera is imperfect and therefore confused. When we look for the reason for this state of affairs it seems to have resulted from the failure of the experimental physiologists: (1) to correlate their physiological facts, and (2) to take a complete survey of the field. They have studied it in a piecemeal-like manner by doing a piece of research work first on one part, and later on another, and then drawing their conclusions about the whole system by considering only the individual part on which the work was done instead of taking into consideration the interrelation of other parts.

As an example of their method of study let us take the work on the salivary glands. One will study the sub-maxillary, another the parotid, and the third the sublingual. Each worker will draw different conclusions with reference to the nervous mechanisms when as a matter of fact they are identical not only functionally but anatomically as well.

The same is true for the thyroid innervation, the pancreas, liver suprarenals, etc.

From the evolutionary view point the visceral nervous system is a survival of the old ganglionic chain systems found in the earthworm, bees and all lower forms and in them the functions are identical for different segments.

So we should regard our visceral systems as an archaic mechanism which has become enveloped by the so called somatic or voluntary system which serves as a house for the former, and the old mechanism works in the same primitive way in its new home that it did in the old one.

### GENERAL PLAN OF VISCERAL ENNERVATION

We shall now endeavor to present the general plan of structure of the visceral nerve mechanism and point out the uniformity of its reactions.

When the visceral nervous system is analyzed on its motor side it is seen to have two phases. One of which is *motor* or a contracting phase, the other an *inhibitory* or a relaxing phase.

A study of the structure of the system reveals this fundamental rule, namely, the nerve fibers which cause contraction of visceral, or involuntary muscle originate within the cerebro-spinal axis and relay in ganglia located in or on the viscus ennerverted. Those fibers which cause the relaxation or inhibition, originate within the cerebrospinal axis and relay in ganglia peripheral to or some distance from the viscus ennerverted.

These statements are true for all the visceral nervous system whether it be the vagus, or autonomic or sympathetic, or parasympathetic. There seems to be an exception in the case of the vagus to the heart, but the heart is in a category of its own because its musculature partakes of the nature of both involuntary and voluntary muscles, and there is some good evidence that the vagus nerve is not purely a visceral nerve but is in part voluntary. With this exception noted we are prepared to show that the visceral vagus motor is not in any sense different from the sympathetic motor. The confusion has resulted from morphological changes incident to the development of or the superposition

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

of the voluntary nervous system on the old archaic visceral mechanism.

#### IDENTITY OF VAGUS AND SYMPATHETIC NERVE FUNCTION

So let us point out the identity between the vagus and sympathetic or autonomic.

Located in the brain stem and spinal cord is a column of gray substance the cells of which form the center for the endings and origin of the visceral nerve fibers. In the medulla of the brain-stem these cells constitute the vagal, salivary, and other nuclei. In the spinal cord they constitute the nuclei of Stilling, and Clark's column. (Fig. 1).

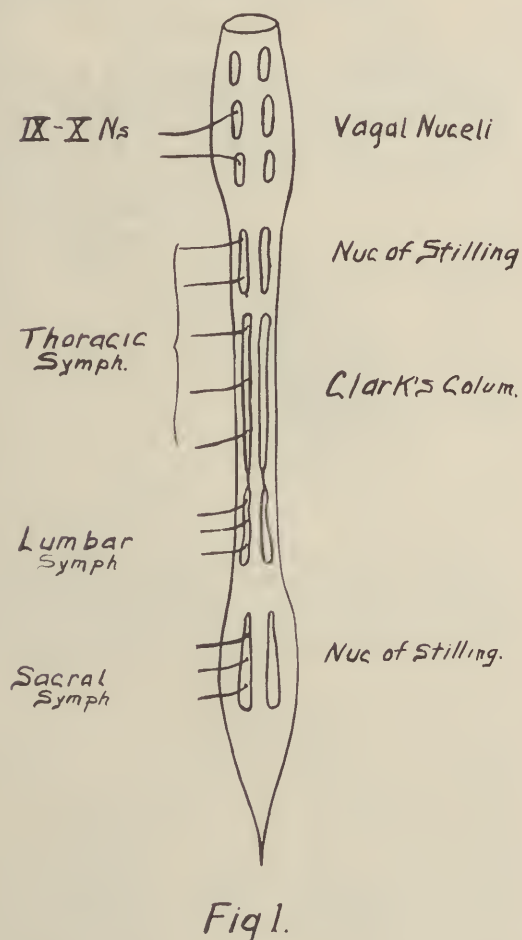


Fig 1.

The sensory or afferent fibers to these enters are identical in extent with the somatic sensory neurones. That is, the sensory visceral fiber arises in the viscus,

runs to and through the ganglia including the dorsal spinal ganglion into the central nervous system. (Fig. 2).

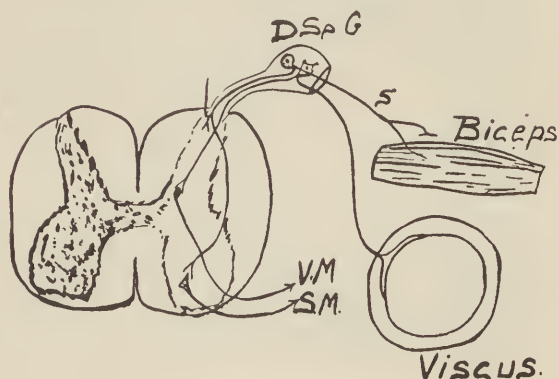


Fig 2.

The outgoing motor fibers arise from the central cell body and if it is motor, i.e., causes contraction of visceral musculature it runs to the viscus and relays in the intrinsic ganglia; if it is inhibitory, i.e., causes relaxation of visceral musculature, it relays in a peripheral ganglion some distance from the viscus to which it is destined. (Fig. 3).

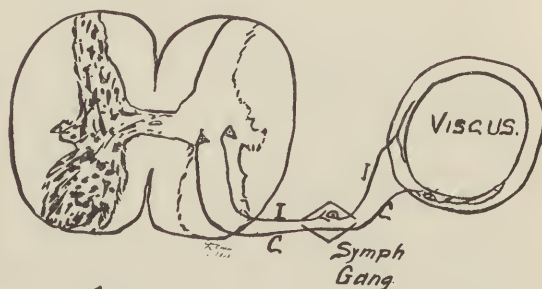


Fig. 3.

The upper part of the alimentary tract is supplied by the vagus and sympathetic nerves. The lower part by the autonomic and sympathetic but as seen from our previous statements, these not only function in identical manner but are also identical in structure. The differences, being apparent rather than real. By reference to the chart (fig. 4) it is noted that the motor

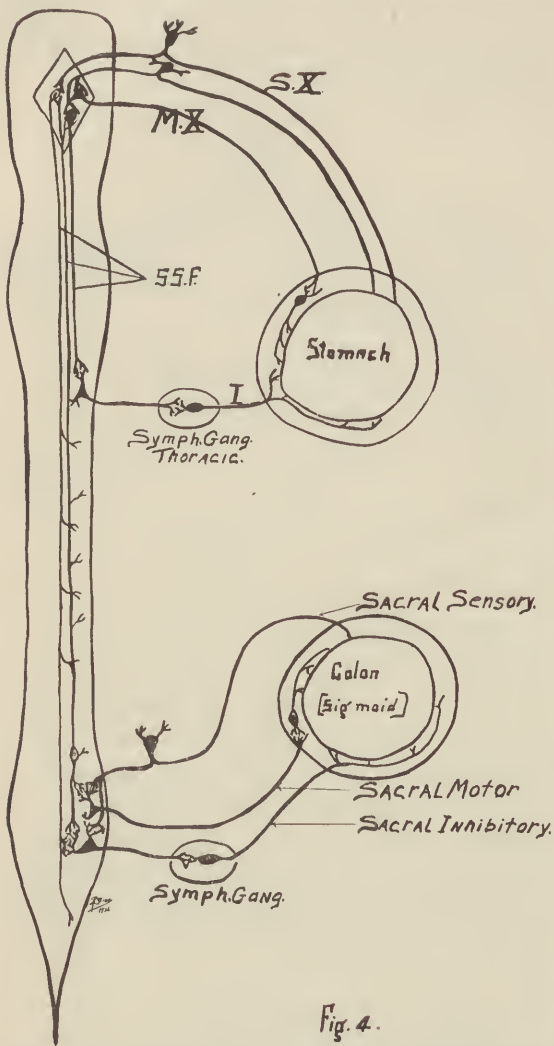


Fig. 4.

fibers of the vagus come out of the medulla and relay in the plexus of Auerbach and Meissner in the viscus. The inhibitory fibers come out of the thoracic cord relay in the sympathetic ganglia and then terminate in the viscus.

In the sacral sympathetic it is noted that the motor fiber comes out of the cord and relays in the plexus of Auerbach and Meissner. The inhibitory fibers come out of the cord and relay in the peripheral ganglion and then terminate in the viscus. Are not these courses identical for the vago-sympathetic and the sacral sympathetic?

#### CENTRAL CONNECTIONS OF VAGUS AND SYMPATHETIC

But you may say that their central connections differ. Let us analyze it. A bundle of association fibers called the solitary and spinal solitary fasciculus is present in the

medulla and cord which connects the vagal center of the medulla and the sympathetic in the cord as represented in the chart. (Fig. 5).

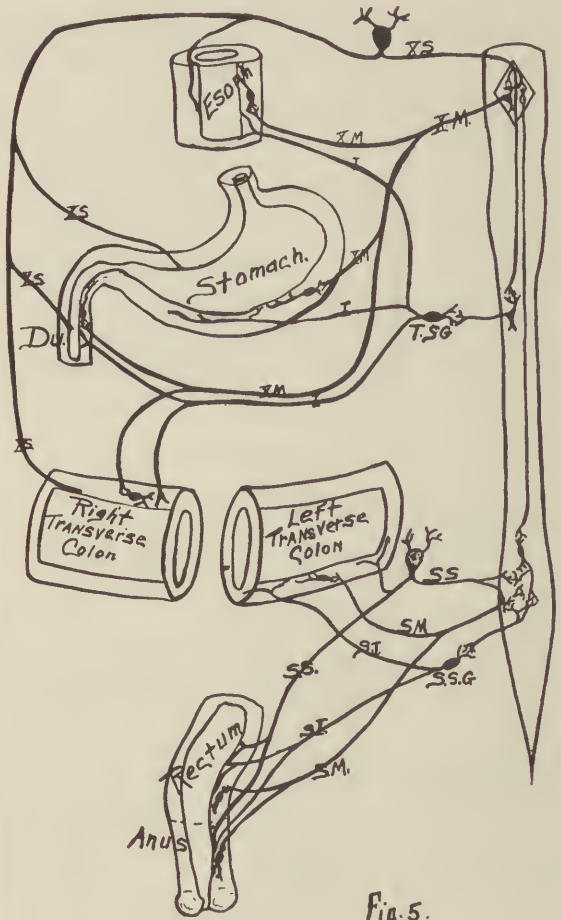
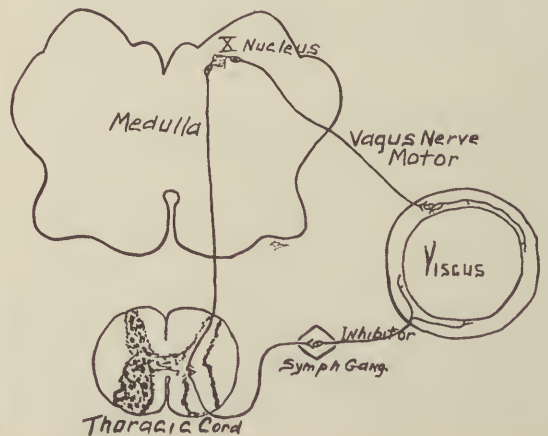


Fig. 5.

In the lumbo-sacral region similar intraspinal fibers exist which, while shorter, connect the motor and inhibitory cells of the sacral sympathetic (figs. 5 and 6).



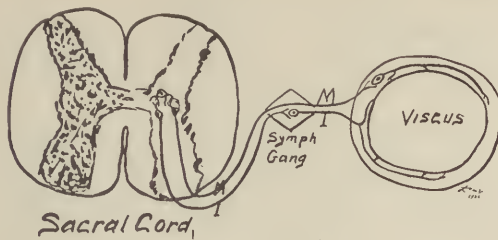


Fig. 6

This demonstrates quite clearly, therefore, that the mechanisms to the upper and lower portions of the alimentary tract are identical in structure as well as in function.

#### UNIVERSALITY OF THE MECHANISM

The mechanism above described is the same whether we discuss the blood vessels (vaso-constriction and vaso-dilatation), the glands, the lungs, the bladder, the uterus or the alimentary tract.

#### THE ALIMENTARY TRACT

So let us confine our attention to the neuro-muscular mechanism of the alimentary tract. In the consideration of the digestive tract we should not lose sight of the fact that one of the physiological properties of visceral muscle is that of automatic and rhythmic contractility, and this may occur independently of the nerve supply but in a system of such great length as the alimentary tract it is quite essential (1) that the contraction wave pass in a given direction, (2) that it be properly correlated, and (3) because of the differences in function of different segments of the digestive tract it is quite essential that the automaticity of the gut wall be properly regulated to subserve the function of each particular segment. For example it has been observed that the rate of passage of the gut content is about as follows: It takes food about eight seconds to travel the esophagus; some food passes from the stomach to the duodenum a few minutes after entrance; in four and one-half hours it begins to enter the cecum; in six and one-half hours it has reached the hepatic flexure; in thirty hours it is in the iliac and pelvic colons. These are the observations of Dr. A. F. Hurst on a bismuth meal observed with a fluoroscope. If the rate of its passage through the esophagus were maintained throughout it would leave the rectum in about four and one-half minutes. So that while the visceral musculature of the gut can contract automatically and rhythmically yet it must be correlated in order to permit the digestion and absorption of food.

The gut when completely severed from the central nervous system is similar to the alimentary tract of an earthworm, whose food, moist earth, passes through in a continuous rhythmic stream. In certain pathological conditions this condition may result as in certain forms of ileus in which food passes rapidly through the bowel in an undigested state.

#### THE KEITH NODES AND SPHINCTERS

To bring about the correlation of the various segments with their different functions we find nerve centers located along the gut, and associated with these centers are more or less well developed sphincters which, when they close, confine the contents of the gut to a certain segment.

These nerve centers were worked out by Keith, and are associated with his name as the nodes of Keith.

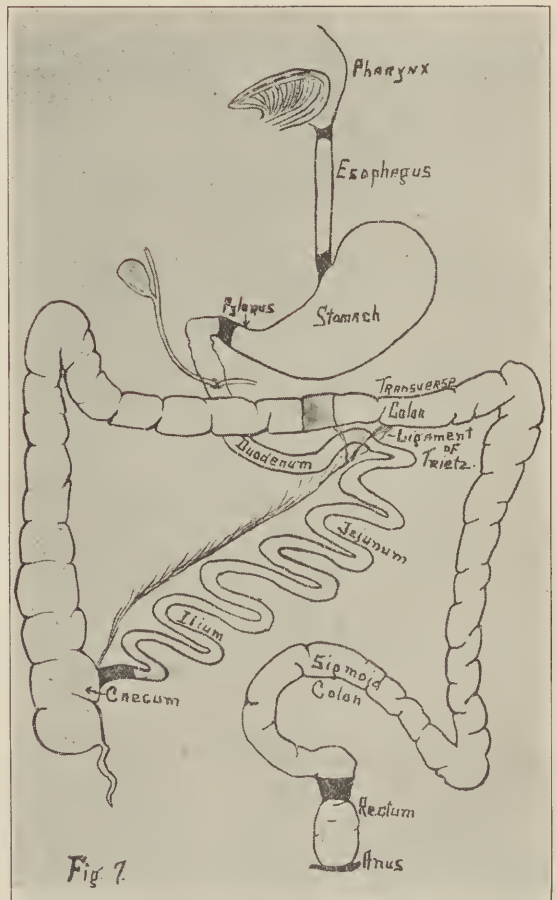


Fig. 7.

By reference to the chart (fig. 7—from Treves) you will note that they are located at (1) the upper and (2) the lower ends of the esophagus, (3) at the junction of

the duodenum and stomach—the pylorus, (4) one just below the entrance of the bile duct, (5) at the ileocecal junction, (6) right middle third of the transverse colon, (7) at the junction of rectum and the sigmoid colon and (8) at the external anal sphincter.

These nodes are similar to the circles of irritation found in the bronchi—which are located at the branching of the bronchi and the peristaltic wave passes towards the larynx. In certain segments of the alimentary tract the contraction or peristaltic waves are directed towards the anus, in others at one time towards the anus and at other times toward the mouth.

In the esophagus, small intestine, left two-thirds of the transverse colon, and the descending colon the peristaltic wave passes towards the anus. In the stomach, ascending colon, and right third of the transverse colon they may pass either way.

The irritability of the gut is greatest at these nodes and gradually decreases until the next one is reached. To all that portion where normal reverse peristalsis occurs, the vagus nerve is distributed. Under certain pathological conditions reverse peristalsis may occur in the part distal to the distribution of the vagus.

It is from these nodes that the normal movements of the gut are regulated but in the event of a pathological condition resulting in a disturbance of their normal functioning one of three or four things may happen. A spasm at one of the sphincters may occur producing stasis of the intestinal contents, constipation, etc., a reverse peristalsis may result, or a combination of spasm and reverse peristalsis as in vomiting with pylorospasm, or relaxation and immobility may occur as in gas distention from failure of the motor impulse to be transmitted and finally a spastic condition may result from failure of the inhibitory impulses to be properly transmitted.

On this basis we have therefore an explanation for regurgitation, vomiting, spasm of the pylorus, duodenal spasm in which bile enters the stomach and is vomited, stercoral or fecal vomiting as in appendicitis, tympanitis, spastic and atonic constipation.

I might mention in passing that the node in the duodenum is often the cause of more mischief than we suspect. It is possible for a spasm of it associated with a spasm

of the pylorus to dam back the bile and produce jaundice, and also involve the pancreas.

### CONSTIPATION

The relation of the intestinal neuro-muscular mechanism to constipation is rather impressive. Constipation is essentially a condition in which the bowel does not properly empty. The *term* constipation is a relative one whereas the *condition* spoken of as constipation is very variable.

The types of constipation recognized are based upon the reactions of the visceral nervous mechanism of the lower bowel. With an understanding of this mechanism and a knowledge of how its normal function may be deranged we are led to expect constipation of the following types: (1) Atonic; (2) Spastic; (3) Atonic-spastic; (4) Spastic-spastic.

### ATONIC

In the atonic type the following conditions may be present either singly or in combination. (a) The bowel musculature may be weakened as in asthenic states after a prolonged illness, as in typhoid fever. (b) The irritability of the central nervous system, (the cord), the reflexes or the ganglia may be below normal.

This condition may be suspected in patients who are in an exhausted condition but the final diagnosis rests upon an examination of the stool. When the bowel empties there results a fairly long stool of large diameter and the diameter is the significant fact in confirming the diagnosis.

### SPASTIC

The spastic type is due to either an over acting musculature which is hypertonic or irritated, or over excitability of the central nervous system (the cord) the reflexes or the ganglia. This type of constipation is to be suspected in high strung, highly nervous individuals. The diagnosis is again confirmed by an examination of the stool which may be fairly long but of small diameter. The diameter again being the significant fact in confirming the diagnosis.

### ATONIC-SPASTIC AND SPASTIC-SPASTIC

The other two types, the atonic-spastic and spastic-spastic, are less frequently discovered. Patients who have either the true atonic or true spastic conditions will complain of constipation, but those with the latter types will usually tell the physician that their bowels move alright, but

upon careful inquiry you may discover this: (1) that the patient's bowels do move every day, maybe more than once, but further inquiry discloses that the stool is quite short, maybe one and one-half to four inches in length in the atonic-spastic type and of large diameter, or it is short and may consist of small nodules and is of small diameter in the spastic-spastic type.

The condition underlying these two latter types is this—in the *atonic-spastic* type the gut wall is relaxed, weakened or atonic, and the sphincteric mechanism is irritable or hypertonic, so that the sphincter at the junction of the colon and rectum relax, the rectum fills with feces and then there is a spastic closure at the rectal sigmoid juncture and the short segment of fecal material is enclosed in the rectum between the sigmoid sphincter and the external anal sphincter. When the anal muscle relaxes the short stool of large diameter is expelled, but only the rectum and not the bowel is emptied. The large diameter is due to the atonic gut wall, and the shortness to the irritation of the sphincter which segments off the stool.

In the *spastic-spastic* condition the underlying cause is a spastic bowel and rectum wall combined with irritable sphincters. So that the spastic rectum may have a slender narrow stool forced into it, and a closure of the sphincters results. When there is an emptying of the rectum the stool is short, and consists of small nodules or is of small diameter. In both of these latter conditions the patients will say that they have bowel movements, and they have but it is not a normal emptying.

#### TREATMENT OF CONSTIPATION

With a knowledge of the nerve mechanism a basis is found for the medical treatment of these conditions. Since the vagus nerve is motor to the upper part of the gut as far down as the junction of the right and middle thirds of the transverse colon, a spasm can be relieved by a drug which will depress or paralyze the vagal nerve endings or, which will stimulate the inhibitory mechanism. In atropine we have a drug which will depress the vagus. So that this drug may be used for the true spastic type of constipation, where there is a vagotonia.

If there is a spasticity due to a hypotonia due to lessened irritability of the relaxor mechanism of the sympathetic, then hydroquinone, ephedrine

or even adrenalin may be used. In the atonic condition physostigmine may be used to stimulate the vagus in hypovagotonia.

In the event that the condition of atonic constipation is due to a lack of the true muscular irritability pituitrin or ergot may be used. If the condition of atony results from lowered irritability of the cord centers, strychnine may be used.

The atonic-spastic and spastic-spastic types may be benefitted by the drug therapy recommended above but lend themselves more readily to topical treatment. A few ounces of magnesium sulphate or olive oil placed in the rectum and retained over night are quite valuable in relieving the spasticity. Quite frequently local conditions such as haemorrhoids, ulcers, fistulae, etc., call for treatment in order to relieve these conditions.

#### DIET

The diet is important as an aggravating factor and in treatment. In the atonic type a bulky, stimulating fodder vegetable type of diet is indicated. The spastic condition calls for a non-irritating diet of small bulk and high digestibility and absorbability. The atonic spastic and spastic-spastic types are so often due to a local focus that the dietetic factor is not so important a consideration although it should be given attention.

#### THERAPEUTIC RESULTS

That a therapeutics founded upon this basis is rational has been confirmed by my own experience in my general practice and in my medical service in Eloise Hospital. C. E. Haines of New York state, concluding a paper, states that tincture of belladonna permanently relieves epigastric distress which, as revealed by the roentgen ray, is due to a contracture of the pyloric quarter of the stomach and concludes that no exploratory incision should be made on the basis of a deformed stomach as shown by the X-ray until the patient has been brought under the influence of belladonna.

#### FIBRILLATING STOMACH—DIGITALIS

F. Hamburger of Munich, emphasizes the efficiency of subcutaneous injections of 0.1 mgm. of atropin in pylorospasm of infants.

A New York physician, in an article, the journal in which it occurred I am unable to locate, recites a long series of cases of jaundice and gall stone colic which or-

dinarily would have been operated upon as clearing up on the administration of belladonna, and I have had the same experience. Cohen of Vienna, recommends it for spastic constipation. In fact in his text book on diseases of the gastro-intestinal tract he speaks of atonic and spastic constipation as I have and recommends similar treatment.

#### SUMMARY:

We have endeavored to show:

1. That at definite locations along the gastro-intestinal tract there are nerve centers (Nodes of Keith) from which the impulses regulating the gastro-intestinal movements take origin.

2. That due to disturbances of these nodes, abnormal motor activity may result such as vomiting, intestinal stasis, spasm, spastic constipation, atonic constipation, etc.

3. A knowledge of the neuro-muscular mechanism involved in motor disturbances of the alimentary tract forms a rational basis for the therapeutic treatment of the conditions resulting, e.g., to relax a spasm by local action on the musculature magnesium sulphate may be used; to relax the spasm by action on the intrinsic ganglia atropin may be used; or by action on the sympathetic ganglia adrenalin may be used. To tone up the neuro-muscular mechanism in atonic states pituitrin and ergot may be used for local action on the muscles; for stimulation of the motor nerves in atonic states physostigmin may be used; and strychnine may be used in lowered reflex irritability for its stimulating effect on the spinal cord mechanism.

#### AN ABSTRACT OF THE WORK DONE WITH TOXOID AND ANATOXINE RAMON IN DIPHTHERIA IMMUNIZATION\*

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*Historical and Definition:* Again science claims to have discovered a simpler and less painful method. This time it is the announcement of the use of diphtheria toxoid, anatoxine Ramon for diphtheria immunization.

Diphtheria can be eliminated in the susceptible childhood population only by extensive immunization. It has been estimated that 75 per cent of the "susceptible"

or pre-school age children among whom the highest fatalities occur, must be immunized for the adequate control of this disease.

About 1921 the term *anatoxine* was first applied by Ramon of the Pasteur Institute in Paris to a specially prepared diphtheria toxin to be used in the place of toxin-antitoxin in immunizing children against diphtheria. About the same time that Ramon did his work in Paris, Glenny, Hopkins and their collaborators worked on the same problem in England. The final product of their efforts was diphtheria toxoid and anatoxine Ramon.

Toxoid is diphtheria toxin whose toxicity is destroyed by the use of formalin or sodium palmitate and protracted heating for 15 to 20 days in a water bath at 38 deg. C. The formalin and palmitate do not affect the power of the toxin to stimulate the production of antibodies.

In England the immunizing value of toxoid has been established by carefully controlled animal experimentation, while on the continent in Paris and Berlin anatoxine Ramon has been used extensively in institutions, schools and private homes and has established its great value as an immunizing agent against diphtheria in man.

In the August 4, 1928, number of the Journal of the American Medical Association it was announced that diphtheria toxoid had been accepted by the Council of Pharmacy and Chemistry and included in the new and non-official remedies.

Toxoid is standardized by the Ramon test. This method measures the relative immunizing power of the toxoid and is also used as a guide in the production of toxoids. Briefly, the test is performed as follows: To equal amounts of toxoid in a series of tubes are added varying amounts of antitoxin. They are then incubated at 50 deg. C. and the first tube to show flocculation is considered the "indicating tube." According to Ramon this tube contains a balanced or neutral mixture of toxin antitoxin.

*Dosage:* Most investigators have reported success with two inoculations of toxoid, but where they met with a refractory case a third inoculation was given. The average dose varied from 0.5 to 1 c.c., and an interval of 14 days to one month was permitted to elapse between inoculations. The Schick test was usually performed before treatment was begun so that

susceptible children could be isolated and immunized. Two or three weeks after the second inoculation the children were again Schick tested and those who were still positive were given a third injection. In only a few cases were reactions to toxoid observed and they were never severe, especially in children under six years of age. Those children who had any reaction to toxoid were not given another injection.

*Results:* Most of the investigators who have worked with toxoid or anatoxine Ramon report very satisfactory results.

Jeffrey reports that all of the 200 children treated by him built up an immunity to diphtheria.

Ruggles used toxoid on 60 inmates of a boys' home, and immunized 80 per cent of them to diphtheria. Schmidt reports that four months after the last inoculation 92 per cent of his patients were Schick negative. Moloney used toxoid on girls from 10 to 18 years of age. He gave two 0.5 c.c. doses and 75 per cent of the subjects became immune in a short while.

Martin, Loiseau and Lafailae used anatoxine on 7,000 cases to check epidemics and as a protective measure. They gave three inoculations at an interval of two weeks apart and reported that 97 to 100 per cent of their patients became immune to diphtheria. They also stated that this active immunity persisted for two years in all patients who had received two inoculations.

Nassau used anatoxine Ramon in an infants' home to avert an epidemic. Unfortunately three of the children developed pharyngeal diphtheria, one 14 days after the first inoculation and one 18 hours after the second inoculation. These failures he explained by supposing that anatoxine Ramon develops antibodies only after several weeks. In some cases six weeks may elapse before the Schick test is negative. The second case may have been due to the fact that what antibodies the patient had were temporarily destroyed by the toxoid and so rendered the child susceptible to diphtheria.

Toxoid and anatoxine have been used very extensively in Europe to prevent diphtheria. In France more than one million persons have been so immunized. The new method is now used in schools, infants' homes, private homes and hospitals on children of all ages, and on hospital

attaches and army recruits. Of all these persons 80 to 95 per cent shown to be susceptible to diphtheria by the Schick test have been rendered immune. Antibodies usually appeared in the blood two to three weeks after the last injection and the number of immunes reached a high point three to eight weeks after the last injection. In younger children the immunity is greater than in adults, and children successfully immunized may not ordinarily become susceptible to diphtheria again during the period of school life. In refractory cases where two inoculations did not give immunity a third and fourth injection were found to yield ultimate success.

*Conclusions:* Toxoid and anatoxine Ramon have many advantages.

1. They are most successful for children in their own homes and in schools where an immediate production of antibodies is not essential.

2. They produce an active immunity. In experimental work with horses and goats it was found that considerable quantities of antitoxin were produced after inoculation with toxoid.

3. There are some children who cannot be properly immunized with antitoxin. These children are susceptible to diphtheria in its worst form and so need active immunization with toxoid. Scarlet fever is one of the diseases which retards immunization.

4. There is no reaction to toxoid or anatoxine in children, especially those six years of age or under, from 0.5 to 1 c.c. doses. Tzanck reports a case of severe anaphylaxis after the administration of toxoid. But it was found on inquiry that the patient always gave a reaction after any injection and when some of the patient's serum plus anatoxine was injected into a guinea pig it caused crises and death.

5. Toxoid does not contain any foreign animal protein and so cannot cause "serum sickness."

6. Toxoid and anatoxine are more stable than toxin antitoxin. There are no reports of any increase in toxicity after it has been found safe for use and stored awhile.

There are investigators who have found that toxoid and anatoxine Ramon also have disadvantages.

1. In some cases it takes so long to build up an immunity that the patients do not return and the doctor has no way of checking the efficacy of the toxoid or anatoxine.

2. In some cases two inoculations are not enough for immunization and so the patient may lose much valuable time and be exposed to infection.

3. As with all new discoveries the optimum amount for injection and the optimum interval between inoculations have not yet been definitely determined.

4. In many cases where antibodies are not developed soon enough this procedure is dangerous. Such delay becomes a menace in infants' homes where each child cannot receive proper examination on entrance. Nassau believes that in some cases toxoid destroys the "contact immunity" which children of long residence in institutions have built up and so may expose them to diphtheria.

**Other Anatoxines:** Anatoxines for other diseases have been prepared. In cholera immunization a toxoid obtained from cholera vibrio toxin is used. Kraus reports that it produces immunity to cholera in animals and when used in man in 0.5 to 1 c.c. doses gives no reaction and causes the production of antibodies which agglutinate the vibrio cholerae asiaticae.

Antitetanic "serum" is now prepared in the same way as toxoid and does away with the serum reaction which so often followed its administration.

**Summary:** 1. Anatoxine Ramon and toxoid are prepared from diphtheria toxin treated in such a way as to abolish its toxic properties and not injure its immunizing powers.

2. Ramon, Clenny, Hopkins and others were the pioneer workers in this field in 1921.

3. The Ramon test is used for the relative standardization of toxoid and anatoxine Ramon.

4. Anatoxine Ramon and toxoid are used to a great extent on the continent in immunization against diphtheria of children and adults in institutions, private homes, and even in the army.

5. An active immunity is obtained with toxoid and anatoxine.

6. Toxoid and anatoxine Ramon have many advantages and some disadvantages over toxin-antitoxin.

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In a silver antiseptic we require first, activity; second, freedom from irritating effect; third, freedom from staining effect, if possible. It is desirable, too, that the compound be freely soluble in water so that solutions of any strength determined upon may be readily made up; and also that the physician be spared the necessity of weighing out the amount needed for a 5, 10, 15, 20, or even 50 per cent solution. All these desiderata are supplied in a colloidal silver iodide preparation, samples of which are being offered by Parke, Davis & Co. The name of the product is Neo-Silvol. It belongs to the class of mild (i.e., non-irritating, non-escharotic) silver compounds.

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# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol. XXI OCTOBER, 1928 No. 10

DR. CLAUDE A. THOMPSON.....Editor-in-Chief  
Barnes Building, Muskogee, Okla.

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Palace Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

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### EDITORIAL

#### EVOLUTION OF CLINICAL MEDICINE AND SURGERY IN RELATION TO THE PRESERVATION OF HEALTH AND LIFE.

Above is the title of the inaugural address of President Franklin H. Martin, Chicago, delivered at the Boston meeting American College of Surgeons, October 8, 1928. This address is deemed so worthy that the Executive Committee of the Congress, composed of some of the most eminent men in American Medicine, have seen fit to pass it along to medical publications in the hope and belief that it will thus reach the rank and file of the profession,

who must cooperate if the best results are attained. Dr. Martin may be truly described as one of America's most brilliant medical organizers and medical executives. He was the prime mover in the organization of the American College which now numbers more than 8,200 members in many parts of the world, outside European and Asiatic countries.

Dr. Martin spoke of the evolution of scientific clinical medicine and surgery; the benefits accruing therefrom to the public; and the grave dangers attending the acceptance of services and teachings of irregular practitioners who represent unsound cults and quackery.

The outstanding conclusions suggested by the address are:

Extension of longevity from average of 58 years in 1920, to 65 years in 1930.

Extension of middle life to a marked degree, estimated to an average of 80 years by 1935.

Extension of average old age upper limit, at present approximately 90 years to an undetermined average, conservatively to 100 or 110 years by 1940 or 1950.

Degenerative diseases, the principal cause of senility, begin at 45 years, the most useful period of life.

Sudden deaths from diseases in middle life are due to neglected degenerative diseases.

Yearly examinations by one's own scientific doctor will detect early beginnings of degenerative diseases of middle life, and appropriate treatment will prevent or postpone their development.

Periodic health examinations, which guard against all preventive diseases, and many curable diseases, are urged upon old and young. An examination of the birthday is urged.

Orgies and overindulgence in eating and drinking, rather than over-work, destroy health and shorten life.

The campaign urging the public to seek yearly examinations has increased the number of examinations from 5,000,000 in 1920, to 20,500,000 in 1928.

The 18th Amendment. More than two-thirds of our people morally and spiritually favor the 18th Amendment of the Constitution. In spite of the injudicious administration of this 18th Amendment,

which has resulted in an orgy of law breaking, of self-indulgence, and ridicule on the part of the other one-third of our citizens, the foundation has been laid for a demonstration of race betterment and extension of life that will astonish the world.

Every physician should procure a copy in full of this masterly address, ponder its contents, and so far as can be put its suggestions into execution at every opportunity.

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### AN INVITATION TO THE OKLAHOMA PROFESSION TO THE SOUTHERN MEDICAL ASSOCIATION MEETING

---

The Oklahoma Profession has always been very generous in attending medical meetings and they have been unusually loud in their praise of the manner of conducting the meetings of the Southern Medical.

The high class of scientific matter obtained in these meetings, the strong bond of fellowship, the warm hospitality, and chance of seeing their friends and fellow classmates, make it more like a family meeting than any other society.

The Southern Medical is second only in size and importance to the American Medical Association and is not antagonistic but merely supplementary to that great organization.

While we are not geographically near the meeting place this year, the chance of going to such a splendid place, with ample hotel accommodations, ought to appeal to us, one and all.

Remember the date and place, November 12-15, Asheville, North Carolina.

LEA A. RILEY, M.D.,  
*Councilor for Oklahoma.*

The Journal takes pleasure in reproducing the above invitation in the interest of better medicine in Oklahoma.—Ed.

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### SOME OF OUR RECENT ADMINISTRATIVE CHANGES

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The new Constitution and By-Laws, adopted at Tulsa in May is now through the printer's hands and will soon be mailed. Among interesting features, which should early be understood by our members are the following:

*Committee Reports*—Reports of standing and special committees shall be pub-

lished in the Journal of the month preceding the Annual Session, and must be in the hands of the Secretary sixty days in advance of the Session.

*Committee on Arrangements*—The Council shall appoint, at least six months before the annual meeting, a committee of three, upon whose recommendation, the Council shall appoint a general chairman of a local committee on arrangements, who shall be a member of the society of the county in which the meeting is to be held, and this chairman shall appoint and organize from the personnel of his society the local committees on arrangements.

*Public Policy and Legislation*—Each county shall select a member as auxiliary to the Committee on Public Policy and Legislation to cooperate and further any move or work undertaken by the State Committee.

*Standing Committees*—Five are provided for, the President, however, as well as the House of Delegates, having power to appoint such other committees from time to time as they may deem necessary to carry on special work and investigations and make reports thereon.

1. Scientific Work.
2. Public Policy and Legislation.
3. Medical Defense (from the Council).
4. Medical Education and Hospitals.
5. Medical Economics.

There are many other changes, which it is believed, if adhered to, will improve the quality of our work.

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### MEETING OF THE COUNCIL

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The Council held its annual Fall meeting October 8th in Oklahoma City for the purpose of carrying out certain mandatory provisions of the Constitution and By-Laws, and directions of the House of Delegates.

Drs. Willour, Gallaher and Thompson were appointed the Committee on Arrangements, recommending the appointment of Dr. Arthur W. White, Oklahoma City, as General Chairman, representing Oklahoma County for the next Annual Session.

A Council Committee on Auditing and Appropriations was named: the committee, Drs. Adams, Willour and Fulton.

Committee on Redistricting Councilor Districts: Drs. A. H. Bungardt, W. Albert Cook and C. A. Thompson.

The Council, upon motion of Dr. Fulton, after discussion, decided to hold two General Meetings at the next Annual Session, one of which shall be given over to orations on Medicine and Surgery. Two hours of the evening of the second day of the meeting will be given over to this meeting.

### *Editorial Notes—Personal and General*

DR. and MRS. T. B. COULTER, Tulsa, are the proud parents of twin girls.

DR. E. T. ALEXANDER, Barnsdall, is attending clinics in Cincinnati and St. Louis.

DR. J. HUTCHINGS WHITE, Muskogee, has returned from several weeks' vacation in Minnesota.

DR. M. V. STANLEY, formerly of Tulsa, recently of Abilene, Texas, has moved to Wagoner, Oklahoma.

DR. and MRS. W. P. FITE, Muskogee, attended the Boston meeting of the American College of Surgeons in October.

DR. T. F. SPURGEON, Frederick, of the Tillman County Hospital, attended the Kansas City clinic in September.

DR. S. E. MITCHELL, Muskogee, took two weeks intensive training in aviation medicine at San Antonio in October.

DRS. J. R. SWANK, Enid, and I. V. HARDY, Medford, have been attending the Mayo Clinic since the middle of September.

DR. JACKSON BROSHEARS and family, Lawton, have returned from Colorado, where they have been for the past several weeks.

DR. H. G. CRAWFORD, Bartlesville, has returned from Rochester, Minn., where he attended clinics at the Mayo Foundation.

DR. SEYMOUR DePORTE, formerly of Ardmore, announces the opening of his office at 501-02 American National Building, Oklahoma City.

DR. HENRY H. TURNER, Oklahoma City, announces the removal of his office from the Medical Arts Building to the New Osler Medical Building.

DRS. J. S. FULTON, Atoka, and L. S. WILLOUR, McAlester, attended the Atlanta meeting of the Inter-State Postgraduate Assembly during the week of October 15th.

DRS. HORACE REED, L. J. MOORMAN and CARL PUCKETT, Oklahoma City, attended the Southern Tuberculosis Conference, held at Biloxi, Miss., September 12-15.

DR. RUTH REICHMANN, Oklahoma City, has been appointed to take the place of Dr. Mary T. Roudebush, University physician for women, whose death occurred recently.

DR. IRA W. ROBERTSON, Holdenville, has purchased the Keystone Hospital, Holdenville, from Dr. Geo. H. Wallace, assuming immediate charge. Dr. Wallace has not announced his future plans.

DR. HUGH SCOTT, Medical Officer in Charge, Edward Hines Hospital, Chicago, after attending the American Legion Convention, San Antonio, visited friends at Muskogee and other eastern Oklahoma points in October.

The first Fall meeting of the OKMULGEE-OKFUSKEE County Medical societies was held September 10, in Okmulgee. Following the dinner D. Geo. R. Osborne, Tulsa, addressed the society on "Cesarean Section." Dr. C. E. Bradley, Tulsa, gave a talk on "Scarlet Fever."

The OKMULGEE-OKFUSKEE County Medical societies met at Okemah, October 8th. Drs. M. Smith and E. S. Lain, Oklahoma City, spoke on "Cancer of the Cervix" and "Indications for X-ray and Radium," and "External Markings of Drug Reactions" respectively.

Members of the OTTAWA MEDICAL SOCIETY were guests of Oscar Hadley, V. I. Cooper and G. M. Cooper, at a dinner September 29th, at the farm home of C. J. Fribley, two miles south of Miami. Guests, other than the members of Ottawa County, were Drs. C. T. Hendershot and A. M. Smith, both of whom made addresses; also Dr. Claude Lowdermilk of Galena, Kansas.

WOODS COUNTY MEDICAL SOCIETY members and their wives attended the dinner held October 3rd, when Dr. D. B. Ensor, Hopeton, and Mrs. Essie Osborn of the Alva Hospital, were hosts. Dr. Lea A. Reily, Oklahoma City, was the principal speaker. Other guests included Dr. L. A. Turley, assistant dean of the State University, and Dr. Sterling, an interne at the University Hospital.

OKLAHOMA STATE HOSPITAL ASSOCIATION will convene for its annual meeting in Muskogee November 22-23. The guest of honor will be Dr. M. T. MacEachern, Chicago, director general, American College of Surgeons. Dr. MacEachern will deliver a public address at the Masonic Temple, open to both professionals and the laity. The meeting will be in charge of Dr. L. E. Eamuel, President, Chickasha, A. J. Weedn, Secretary, Duncan, and T. M. Aderhold, El Reno.

OKLAHOMA STATE DERMATOLOGICAL ASSOCIATION met in Oklahoma City, October 13. Clinics were presented at the University Hospital, followed by a luncheon, discussion and recreation. At 7:30 P. M. Dr. Richard L. Sutton, Kansas City, the guest of honor, delivered an illustrated lecture on "Adventures in Tigerland." This lecture states the actual experiences of Dr. Sutton upon two extensive African and Asiatic big game hunting trips.

MUSKOGEE COUNTY MEDICAL SOCIETY met October 5th, about forty physicians being present. After a dinner at the Hotel Severs, Dr. Dwyer, Kansas City, delivered a talk on the "Prevention of Infant Mortality"; Dr. Ray M. Balyeat, Oklahoma City, on "Asthma in Children," and Dr. Frank H. Turner, Oklahoma City, upon "The Early Diagnosis and Treatment of Endocrine Disturbances." The meeting was a success.

THE LINCOLN COUNTY MEDICAL SOCIETY met in regular session with Dr. Nickell, the president, at Davenport, September 20th. Those present were: Drs. U. E. Nickell, J. S. Rollins, H. C. Iles, J. W. Adams, A. W. Holland, W. P. Cottrell, J. M. Handcock, A. W. Coleman and W. D. Baird. Visitors were Drs. A. L. Blesh and J. Z. Mraz, Oklahoma City. Dr. Mraz was introduced and gave a discussion on "Referred Pains in Differential Diagnosis." Dr. Blesh gave a talk on "Goitre." Dr. Rollins, speaking for the doctors of Prague, invited the society to meet at Prague for the October meeting. The invitation was cordially accepted.

DR. C. C. RICHARDS was host to the Stephens County Medical Society at their September meet-

ing. The following program was rendered: "Dental Infections," Dr. A. B. Leeds, Chickasha; "Focal Infections of the Head," Dr. J. L. Patterson, Duncan; "The Duties of A Health Officer," Dr. D. Long, Duncan. The following members were present: Drs. Russell, Carmichael, Salmon, Patterson, Williamson, Long, Ivy, Pate, Smith, Bartley, McMahan, McLain, Richards, Overton, P. B. Hall, Burnett, Weedn, Talley, Brewer and Nieweg. The following visiting doctors were present: Drs. A. B. Leeds, Chickasha, and Henry Weedn, California. Drs. J. B. Carmichael and J. P. Bartley will be hosts at the next meeting.

TULSA COUNTY MEDICAL SOCIETY meeting October 8th, was presented the following program: Symposium on Nephritis. (1) "Acute Glomerular Nephritis—Causes, Symptoms and Laboratory Findings," Dr. D. O. Smith; (2) "Chronic Glomerular Nephritis—Causes, Symptoms and Laboratory Findings," Dr. S. C. Shepard; (3) "Chronic Intestinal Nephritis—Causes, Symptoms and Laboratory Findings," Dr. Robert Witcher; (4) "Treatment of Nephritis," Dr. W. J. Bryan, Jr.; (5) Lantern Slides, illustrating pathology in each type of nephritis.

### DOCTOR MARY T. ROUDEBUSH

Dr. Mary T. Roudebush, 35 years old, resident physician for women at the Oklahoma State University, died suddenly Friday night, September 14, at her home in Norman. The body was sent to Jackson, Tenn., her former home, and burial services were held September 16th.

Dr. Roudebush was born in St. Louis, Mo., August 23, 1893. She attended the Mississippi State College for Women, where she received the bachelor of science degree in 1913. She received a bachelor of science degree from the University of Wisconsin in 1918, and an M. D. degree from John Hopkins University, Baltimore, Md., in 1920. Dr. Roudebush had studied for a time in the University of Vienna. Before coming to the University of Oklahoma in 1927, Dr. Roudebush had been physician for women at the George Peabody College for Teachers, at Nashville, Tenn.

### DOCTOR ISSAC ANSELL BRIGGS

Dr. Issac A. Briggs, Stillwater, died September 27, 1928, following an emergency operation for gall bladder disease.

Dr. Briggs was born November 22, 1869, near Bakersville, N. C. He was educated at Milligan College in the eastern part of Tennessee, after which he was president of Stewart Normal College for a term of five years. After attending different medical schools he was graduated at Barnes Medical School, St. Louis. He removed to Oklahoma in 1901, practicing at Atoka, Enid and Hollister. He located in Stillwater after this, where he remained in practice until his death.

Dr. Briggs is survived by his widow and a son and daughter. Midnight funeral services were held at the Christian Church by the Masonic Consistory. Burial was made at Fairlawn Cemetery.

Dr. Briggs had built up an extensive practice and a large circle of friends during his residence at Stillwater.

**UROLOGY and SYPHILOLOGY**

Edited by Rex Bolend, B.S., M.D.  
1010 Medical Arts Building, Oklahoma City.

**CLIPPINGS FROM  
THE UROLOGIC AND CUTANEOUS REVIEW**

For post-arsphenamine serous encephalitis adrena-line intravenously is the most effective drug.

Lesions of the hat-band region, if at all nodular, should be followed up with a Wassermann test.

Have the output of your X-ray tube checked up from time to time by means of an ionometer.

Five per cent of all patients with prostatic obstruction also present a diverticulum of the bladder.

If syphilitics in the early stage were less able to be ambulatory, it would be better for their syphilis.

One of the best bases for an ointment that is to be thoroughly rubbed into the skin is glycerite of starch.

As a rule, age for age, elderly women tolerate slightly more intensive anti-syphilitic treatment than do elderly men.

A priapism of more than twenty-four hours duration will be found to be complicated by thrombosis of the cavernous sinuses.

The urine of a syphilitic should be tested for albumin at bi-weekly intervals even though he has been receiving only bismuth therapy.

Because a stone or diverticulum is found with considerable difficulty, do not let "that tired-feeling" lead you to be content with what you have found; remember that there may be other lesions which will show up on later, more complete examinations.

**Urology in Childhood.**—Herman L. Kretschmer, in the Atlanta Medical Journal, for April, 1928, writes that urologic problems in infancy and early childhood resemble similar problems in the adult. The technic can be mastered with practice, and once the operator becomes expert with the small instruments, no difficulties will present themselves. At the present stage of advancement in medical knowledge, procrastination, in place of careful and complete urologic study in all cases that do not promptly respond to treatment, has not the shadow of an excuse. Instrumental therapy, by which is meant lavage in pyelitis and litholapaxy in the treatment of stones in the bladder, can be carried out with the same precision as in adults. The surgical treatment of the various lesions encountered presents no special problems.

**Chronic Pyelitis in Infancy and Childhood.**—Henry F. Helmholz, in the Atlantic Medical Journal, for April, 1928, insists that cases of acute pyelitis should be followed until it is certain that the infection has disappeared bacteriologically as well as clinically, in order that cases which cannot be cured medically and need special urological

examination may be recognized. In a certain percentage of cases, chronic pyelitis can be cured by intensive use of methanamin with ammonium chlorid. Infections which do not respond to treatment are usually complicated by anatomic obstruction of the urinary tract. Early urologic examination and surgical treatment will prevent extensive renal injury from chronic infection and back pressure.

**Urography—Common Diagnostic Errors.**—Miley B. Wesson, in Radiology, for May, 1928, says that pyelography was a procedure fraught with danger ten years ago, but today, because of the universal use of harmless 12 per cent sodium iodid as the opaque medium, it is no more dangerous than the passage of a urethral sound. The ideal method of injection is by gravity, using two burettes held in a clamp 18 inches to 24 inches above the patient. Under-injection results in erroneous diagnosis and over-injection (with syringes) spoils the films and causes the patient a few hours or days of discomfort. Bilateral pyelograms are very comforting to the roentgenologist for most abnormalities that occur on both sides are congenital and not the result of acquired pathology. Any patient who will tolerate bilateral ureteral catheterization is a subject for bilateral pyelography; in one case the kidney pelvis are lavaged with silver nitrate and the other with sodium iodid. Single pyelograms subject the patient to an unnecessary double expense.

**Cystoscopy Reactions.**—H. L. Wehrbein, in Annals of Surgery, for March, 1928, says that the presence of infectious organisms and trauma are the most important factors in the causation of cystoscopy reactions. Cystoscopy reactions are far more common in men than in women. The skill and gentleness of the operator play an important role in the incidence of cystoscopy reactions. Elevated temperature and infection of the urinary tract, with the exception of acute prostatitis are not absolute or even common contraindications to cystoscopy. Cystoscopy should not be undertaken lightly, pyelography is still more serious than simple ureteral catheterization, and double pyelography should be performed only under the pressure of unusual circumstances.

**Late Results From Tryparsamide Therapy in Neurosyphilis.**—W. F. Lorenz, in the Journal of the American Medical Association, for April 21, 1928, urges that, as a result of his experience and review of results after the lapse of five to six years, every case of syphilis of the central nervous system be treated energetically. Tryparsamide and mercury offer a convenient and remarkably effective treatment. It is necessary to select cases in making a choice of tryparsamide, other arsenicals, malarial inoculation or other therapy of proved value. In the instance of tryparsamide, an extensive trial should be made before the drug is discarded. There are now many patients who have enjoyed health and efficiency for periods of from five to six years as the result of treatment with tryparsamide and mercury. These are largely cases that would have otherwise, without doubt, passed on to hopeless chronicity and death. As a result of this review, it is my conviction that absolute differentiation by either clinical or serologic evidence between amenable and resistive cases cannot be made before a therapeutic trial. Early improvement is very encouraging and argues for a persistence of the efforts insti-

tuted. Lastly, a point that cannot be too much emphasized is the practice of regarding every case an individual problem in which all the evidence, clinical and serologic, must be weighed before planning the therapeutic attack.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
717 North Robinson St., Oklahoma City

**Poliomyelitis: With Especial Reference to the Treatment.** By W. Russell MacAusland, Philadelphia, Lea and Febiger, 1927.

This monograph of 402 pages is divided into two parts. Part 1 consists of eight chapters dealing with Epidemiology, Etiology, Pathology, Symptomatology, Classification of Types, and Diagnosis and Prognosis. Part 2 takes up treatment in six chapters under the following headings: General Treatment, Treatment of the Lower Extremities, Treatment of the Upper Extremities, The Restoration of Muscle Power, The Surgical Treatment of Paralysis, Apparatus and Plaster.

The book has been well edited and is remarkably free from the usual errors of an initial print. The author's objective, as set forth in the preface, in establishing a comprehensive account of the disease, is fulfilled in Part 1. The chapter on Epidemiology is especially good.

The arrangement of Part 2, in dealing with all phases of treatment, leaves much to be desired. Early operations are quite clearly discountenanced by the author in some sections, but in others he is not definite, and the unqualified surgeon is likely to seize upon this part of the text as authority for surgical experience.

It seems doubtful whether anyone could so arrange this part of the subject matter as to entirely meet the requirements of general practitioners and orthopaedic surgeons. It is also improbable that a work of this sort would be free from such debatable points as operations of choice, age factors, etc.

In reference to stabilizing operations on the foot, no one who has mastered the technique of Hoke's operation will be discouraged by the author's comment, nor greatly impressed by his modification, as depicted on page 341.

On the whole, however, Dr. MacAusland's book is quite worth while.

**The Stabilization of the Flail Leg: H. Tyrrell Gray.** *British J. Surg.*, xv, 390, January, 1928.

Arthrodesis of the knee is advocated in cases of extensive infantile paralysis of the lower limbs. At the end of two years after the onset of the paralysis, cases are selected in which there has been no return of muscle power or where the patient is unable to bear weight without heavy braces. A narrow bone graft three inches long is taken from the crest of the tibia. The knee is opened, the cartilage is removed from the tibia, femoral condyles, and patella and the semilunar cartilages are excised. A hole is then drilled through the epiphyses of the tibia and the femur and the graft inserted into the diaphyses. The leg is put in plaster for two months. In most cases the ankle joint has been arthrodesed also.

Case reports are given of nine cases. Ankylosis took place in each case. The results were satisfactory except in two cases where there was extensive oedema of the extremity. In one this

cleared up after several years, but a marked genu valgum appeared. In the other the swelling has remained. The author does not think that the damage to the epiphyses from the graft is serious enough to consider it.

**Operative Correction of Claw-Foot: Hans Spitzzy.** *Surg. Gynec. Obstet.*, xlv, 813, December, 1927.

The most severe cases are congenital. The cause is usually myelodysplasia, a derangement of development of the lower segments of the spinal cord, often associated with spina bifida. Other causes are syringomyelia, multiple sclerosis and other types of paralysis of peripheral nerves. The author's operation consists of his "slipper incision" around the heel and posterior half of the foot, reflecting all the soft tissues downward and then forward from the heel and under surface of foot, including the ligaments under the mid-tarsal region, thus permitting the pes cavus to be corrected completely. If, after this, there remains marked claw deformity of the toes, he transplants the extensor tendons of toes into the heads of the metatarsals. It is claimed that this operation was devised independent of, if not prior to, the work of Steindler, and presumably, of Jones.—R. W. Billington, M.D., Nashville, Tenn.

### EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.  
726 Mayo Bldg., Tulsa

**On Pseudoglaucoma: Fuchs, A.; Brit. J. Ophth.**, 1928, xii, 65.

In this paper, Fuchs discusses seven cases of pseudoglaucoma. The first patient had a congenital pit in the optic disc co-existing with a glaucomatous excavation of 4 diopters. The upper half of the visual field was lacking; central vision with glasses was 6-12; tension was 22 mm. Hg. (Schiotz) before and after the administration of homatropin and after dark adaptation.

In the second case a coloboma of the nerve head produced an appearance of glaucoma, but the following contra-indications to this condition were present: a semi-opaque tissue (neuroglia) filling the excavation; tension of 20 mm. hg.; enlargement of the papilla; a horizontally oval blind spot; and the fact that in a year there had been no change.

The third case was somewhat similar to the second. Enlargement of the pupilla was questionable. Surrounding the pupilla was a halo more than 1 diopter depressed from the level of the retina and irregularly outlined with pigment. The field and tension were normal. A sister of this twelve-year-old patient had a conus inferior.

In each of the four other cases, angiectasis of the eyeball was present and resembled the congestive type of glaucoma in that the dilated conjunctival and ciliary veins produced an appearance of caput medusae. In one of these patients there also existed a region of angiectasis in the nasolabial fold.

**Posterior (Mastoid) Drainage in Acute Suppuration of the Middle Ear: McKenzie, D.** *Proc. Roy. Soc. Med., Lond.*, 1928, xxi, 616.

Late operations on the mastoid have been the rule, but McKenzie in his article recommends early mastoid drainage of middle ear suppuration as a cure for a purulent otitis media in which simple

meatal drainage has failed. He has performed this type of operation in thirty-one cases. Two of the patients developed erysipelas, two required a second drainage operation, and one patient died of meningitis.

The author strongly recommends poste ior drainage at a reasonably early date in cases of chronic suppurat.

**Some Notes on Paracusis Will'sii from the Ferens Institute of Otolaryngology: Hastings, S., and Scarff, G. R. Proc. Roy. Soc. Med., Lond., 1928, xxi, 611.**

Hastings and Scarff report the results of tests made in thirty cases of middle-ear deafness. In these tests, they used a Tucker audiometer with which a pure note is electrically produced. In two cases there was absolute paracusis, the second being heard better while the disturbing noise was being made. Sixteen cases showed a relative paracusis. In twelve cases a crossed paracusis was observed.

The authors state that as far as they know, this phenomenon has not been described previously. They offer no explanation of the condition but conclude that only a few persons actually hear better while a noise is being made.

**Discussion on Deep X-ray and Radium Therapy in Relation to the Mouth and Upper Respiratory Tract: Watt, W. L., Finzi, N. S., Cade, S., Milligan, Sir W., and others. Proc. Roy. Sec. Med., Lond., 1928, xxi, 649.**

Watt believes that the action of deep rays directed on an area to be treated chiefly affects the nuclei of the cells. Two reactions appear after deep raying. The primary reaction consisting of swelling of the glands and rapid reduction in size appears within a few hours. There is some systemic disturbance including fever, malaise, nausea, and vomiting caused by the absorption of the destroyed cells. The secondary reaction appears at the end of the third week and is similar to the primary reaction.

In treating solid tissues the rays are well diffused, but when the throat is treated such is not the case because of the insufficient body fluid coverings and the presence of large air cavities. To overcome these defects, glucose is used to increase the density of the body fluids, and the rays are softened so the absorption will be more thorough. Whenever possible, surgery is advisable, but the author prefers diathermy combined with radiation. Radiations appear to produce antibodies which remain active for long periods and tend to inhibit the recurrence of the disease. Prophylactic radiations from eighteen months to two years after the primary raying are advised at times. While the question of dosage is difficult the author now endeavors to give the growth the same amount of rays as will cause a slight skin reaction within three days. After-treatment should include exposure to artificial sunlight.

Finzi is satisfied that some types of sarcoma yield more readily to treatment than do epitheliomata or carcinomata. The immediate dangers of applying X-ray or radium to the larynx are oedema of the larynx and secondary hemorrhage. A remote danger is a board-like hardening of the skin and subcutaneous tissues which are thus predisposed to infection. For laryngeal epithelioma, treatment with radium yields at least as great a percentage of cures as does surgery, while with lymphosarcoma the response to radiation is dramatic. Finzi

feels that cooperation between the surgeon and radiologist is essential in order to choose the form of treatment which will offer the best prospects.

Cade treats malignant disease of the oral cavity by attacking the primary growth in the mouth and also the secondary deposits in the neck with radium. Should the tumor be embedded in an area of oedema the results are very unsatisfactory.

Milligan thinks that radium treatment is proving very valuable and that the prospects for improvement in the treatment of malignant disease are encouraging.

## DERMATOLOGY AND RADIO-THERAPY

Edited by C. P. Bondurant, M.D.  
413 Medical Arts Building, Oklahoma City

**Pellagra: Its Nature and Prevention. U. S. P. H. Report, September 2, 1927. Joseph Goldberger.**

In general an attempt is made to answer some of the more important questions which the public and general physician asks regarding pellagra. Considerable attention is given to symptoms and especially to cases which do not present the whole clinical picture. In a well developed case the disease shows itself by a variety of symptoms; of which an eruption, weakness, nervousness and indigestion form a most characteristic combination. The eruption is the most distinctive telltale of the disease and the main reliance in its recognition. This eruption characterizes itself by a predelection for certain surfaces; the backs of the hands, forearms, and the backs of the feet are its favorite sites. A burning or scalded feeling in the mouth, redened tongue, burning of the hands and feet and looseness of the bowels in persons who have restrained themselves to a limited diet, even in the absence of skin changes, should be regarded as justification for a suspicion of the disease. Insanity is a late symptom and is far less common than once thought. There is a direct relation to living cost in the incidence of pellagra, the poor man being the chief sufferer. Statistics from 1914 to 1921 are given to justify this statement. No germ can properly be considered its cause. Inoculation by blood and saliva has never been successful. Facts are set forth to prove that pellagra is caused by subsisting on a special kind of faulty diet and that people who consume a mixed, well-balanced diet do not develop the disease. The pellagra-preventing vitamin is thought to be present in nearly all natural foods except the oils and fats. Proper diet guards against recurrence.

**Rontgen Protection for the Personnel: B. K. Rosenzweig: Charkow (Fortschr., d. Rontgenstr. Bd. 36-H, 4).**

The author permits the personnel to be present in the treatment room when intensive therapy is being used only when the tube is completely isolated so as to avoid all aberrant rays. When the tube is not isolated the room in which the personnel during the treatments should be shielded by a barium or lead wall 6 mm. in thickness and extending a few cm. below the floor. A protection cabin is suggested as a method of protection from the emanation of the irradiated patient. Where the tube is used for diagnostic purposes the lower part of the body of the examiner should be shielded by proper screening. The room should be well

ventilated with vents just above the floor, as these heavy asphyxiating gases sink. The use of the bare hands for palpation below the screen is warned against. In this connection it must be remembered to use the tube on as short a time as possible. Great caution with the X-ray must be exercised with persons who have hypersensitivity of the skin, endocrine disturbances, Grave's disease, psoriasis, eczema, diabetes and cardiac diseases and are to be warned against X-ray occupational careers.

**Pellagra:** W. A. Dearman, *Southern Med. Jour.*, September, 1928.

The Greek and Latin derivation of the word pellagra suggest it's cutaneous picture, and while the gastro-intestinal and neuropsychiatric symptomatology is outstanding, a diagnosis cannot be made unless the cutaneous manifestations are present. Little information is available concerning the specific cause other than the important roll played by an unbalanced diet. Reliable authority and accurate statistical data are given to indicate that the disease is not on an increase in the south. Control of the disease goes together with advances in education and general improvement. Tables given indicate that twice as many cases occur in negroes as in the white race. The treatment of pellagra is preventative, curative and palliative. The general diet suggested is the liberal consumption of fresh, wholesome milk, lean meat, fresh green leafy vegetables, fruit, cereals, cream and fresh eggs. In the discussion many interesting points were brought out by Dr. Jos. Goldberger. He cited the work of his own labora-

tory with experimental animals and gave some valuable points on the dietary etiology of pellagra.

**Etiology of Erythema Nodosum:** M. Arborelius. *Hygeia*. 90-265, April, 1928.

Arborelius is of the opinion that this eruption is a form of nonspecific reaction occurring in various infections. He credits recent tuberculous infection as foremost in childhood and early youth, with other infections being the usual factor in adults. He discusses freely the compatibility of his views with other recent theories of the tuberculosis and rheumatic origin of erythema nodosum. He also notes its seeming contagious nature. An interesting case of erythema nodosum occurring in polyarthritis is described.

**The Serum Treatment of Erysipelas:** W. S. McCann, *J. A. M. A.*, 91-78. July 14, 1928.

The results of 115 cases of erysipelas are analyzed by the author after he had given the serum treatment. His conclusions are that the true value of this method of therapy in the treatment of erysipelas cannot be established until further study can be made of longer series with simultaneous controls on which the serum had not been used. He credits seasonal and annual variations with much importance in this connection. He also thinks the cases should be balanced according to age of patients, and character and distribution of the lesions. He records considerable objection to previously published reports on the last of inadequate controls. The results obtained in these cases do not entirely discredit the serum therapy.

Report of Examination for Licenses to Practice Medicine

Report of Oklahoma Board of Medical Examiners, held in Senate Chamber, State Capitol, Oklahoma City, September 11 and 12, 1928; number of subjects examined in, 12; total number of questions, 120; percentage required to pass, 75; total number examined, 5; number passed; 5. All applicants, regular school of practice, and licensed by written application.

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Address
Baird, Cecil Dryden	1902	Owensboro, Ky.	University of Okla.	1927	Eureka, Kansas
Saler, Donald Hall	1897	Harrisburg, Pa.	Western Reserve	1926	DeNoya, Oklahoma
Calhoun, Walter Henry III	1898	Newbern, N. C.	University of Va.	1925	Tulsa, Oklahoma
Chalmers, James Scott	1894	Chicago, Ill.	University of Va.	1926	Ada, Oklahoma
Coachman, Edwin H., Jr.		Fluffton, Ga.	University of Mich.	1926	Muskogee, Oklahoma
Halley, Claude Diekerson	1881	Reform, Mo.	St. Louis University	1910	Maude, Oklahoma
Morrison, Henry Clinton	1896	Cleora, Okla.	University of Tenn.	1924	Maude, Oklahoma
Dill, Francis	1903	Okeene, Okla.	Creighton Medical	1928	Oklahoma City
Sabin, Clarence Willard	1896	Manchester, Iowa	Nebraska University	1928	Tulsa, Oklahoma
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Van Valin, James C.	1904	Herman, Neb.	Nebraska University	1928	Tulsa, Oklahoma
West, Thomas Hector	1905	San Marsial, N. Mex.	University of Tenn.	1928	Tulsa, Oklahoma
Boys, Fay Frank	1901	Kansas	University of Kansas	1927	Pearson, Oklahoma
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# THE JOURNAL

OF THE

## OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLAHOMA, NOVEMBER, 1928

NUMBER 11

### ACUTE GONORRHOEA IN THE FEMALE\*

J. H. HAYS, M.D.  
ENID

We will not attempt an academic discussion of this subject, but will rather present a clinical picture, as we observe it in our office or at the bedside. We are also presuming that the infecting organism has been confirmed by the laboratory as the gonococcus.

It is a common story that the G. U. man hears many times a day: "Dr., I have a burning pain on urination, or I have a vaginal discharge that burns and irritates me very much, or I have a profuse vaginal discharge, or I have a dull, continuous pain across the anterior pelvic region."

The patient making one of these statements may range in age from 2 years to 75, and may be a representative of any station in society.

If she is a child under 12 years of age, we should ascertain whether any other member of the family, as the father or mother, or any of her playmates or associates have a similar trouble. If it is a young unmarried woman, we have to consider clandestine intercourse. If a married woman of any age, we must consider the probability of the husband being similarly infected; so in all our management of the case of whatever age, unless the individual already knows the source of infection we must carefully conduct ourselves in an endeavor to produce no further discord in the social status of the patient with her surroundings, especially with her family relations.

If a child, the parents should certainly know the trouble. If an unmarried woman she should know. If a married woman—that all depends. Certainly she should not be told if she is an innocent victim, but she should be told if she is the offender.

There are very few cases of gonorrhoea contracted, and those chiefly in young girls from 2 to 10 years old, except by intercourse. Accepting this statement as true it is at least the tactful thing for the physician to be careful, both in his actions and conversations with the patient, because it is of little value to create discord in the home or cast reflections upon some one else. The average woman can create plenty of that of her own volition.

The area susceptible to the infection in the female is far greater than in the male. This area extends from the external genitalia through the vagina to the cervix—through the cervix into the body of the uterus, out through the fallopian tubes to the ovaries, thence into the peritoneal cavity. From the external meatus through the urethra into the bladder with a possible extension to the pelvis of the kidney.

There are three possible original foci of infection: (1) the vulva, (2) the external meatus of the urethra, and (3) the cervix.

In children from 2 to 12 years old the foci is nearly always in the vulva. A child will have an acute vulvitis with a rather profuse yellowish discharge which burns and produces a great deal of irritation. The vulva will be swollen, usually with considerable excoriation. On urination the child will often complain bitterly. Many of these children complain of irritation when walking or playing. The discharge may produce considerable irritation around the vulva, and on the inner side of the leg. The second focus of infection—the external meatus of the urethra is practically always infected in every case of gonorrhoea produced by coitus. The external meatus is swollen, the lips protrude, giving the appearance of an eversion or prolapse of the urethra. The surface is often covered with pus; the patient will complain of *burning* on urination. The infection extends rather rapidly up the urethra, the glands surrounding the urethra are early involved, and on palpation the urethra feels hard and about the size of the little finger, and by gentle massage from above downward,

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

a great deal of pus can be expressed. On each side of the vulva are the glands of Bartholin and these become infected also. The opening of the ducts of these glands always appear red, and are landmarks looked for by the physician in all these cases. When these glands are gently grasped between the thumb and fore-finger, pus can be expressed from them. Third, the cervix is usually infected in every case of gonorrhoea contracted by intercourse.

The infected cervix is red, swollen and bathed in pus. If the infection is not taken care of early, it will extend rapidly upward through the internal os into the body of the uterus and out into the Fallopian tubes and beyond the reach of local applications. It is this focus of infection that should have the early attention of the physician, because from here the disease extends upward and vitally affects the individual. The cervix is practically never infected in females before puberty. The infection is slower to extend upward in a woman who has never had the cervix dilated, nor been pregnant. But the woman who has borne children and the cervix is lacerated the infection extends into the uterus almost immediately, in fact I have seen cases with a badly lacerated cervix—the cervix itself did not appear to be infected, but the discharge from the uterus contained many gonococci. It appears that the scar tissue of a lacerated cervix is difficult to infect by the gonococci, but the os being wide open the infection goes direct to the body of the uterus.

Nearly every case of gonorrhoeal infection of the cervix also has an infection of the external meatus, and soon infects the glands of Bartholin, thus from a gonorrhoeal cervicitis the whole uro-genital tract may become involved. Fortunately, gonorrhoeal infection of the cervix is the easiest focus to cure if seen early and properly handled.

The treatment of gonorrhoea is as varied as are the cases themselves. The general course of treatment of vulvitis in children is the frequent cleansing with a warm sterile boric acid solution or with a weak permanganate solution, then, with a topical application of neo-silvol, argyrol, or a similar silver salt; keeping the child off of her feet as much as possible. For the urethritis of women, the urethra should be gently massaged daily, followed by instillations of some of the silver salts; the patient in-

structed to drink large quantities of water, and for the relief of the pain, give large doses of sandalwood oil, use hot boric acid compresses, and also hot boric acid douches. Later it may be necessary to irrigate the bladder with sterile boric acid solutions. The glands of Bartholin, when infected, should be massaged daily if the duct remains patulous. If the duct closes, the glands will fill with pus and become very painful. If the duct cannot be opened with a probe, the gland will have to be incised or dissected. If either incised or dissected the wound should be packed with iodoform or mercurochrome gauze.

For gonorrhoeal cervicitis I have the most brilliant results with the local application of tr. iodine. Unfortunately iodine is irritating and cannot be used more than three or four days in succession. However, in that length of time I have seen it completely clear up many cases of early cervicitis. Through a vaginal speculum the whole of the cervix is thoroughly painted, the os well swabbed and allowed to *dry* before the speculum is removed. The iodine apparently extends up the ducts into the cervical glands.

The patient is instructed to take potassium permanganate (1-500) douche 6 to 8 hours after the treatment. If the iodine irritates too much then we alternate the applications with 10 to 20 per cent Agno 3. But silver nitrate is not nearly so effective as the iodine.

When the infection extends from the cervix into the body of the uterus, and it does in many cases, *what shall we do?* Whom shall we consult, the surgeon or the Christian Scientist? No, let's go a little slow. Our patient is now having considerable pain, probably fever. Suppose we put her to bed, apply cold to the pelvis and lower abdomen, give her some gonorrhoeal vaccine. This plan of treatment will relieve most cases and cure some of them. There are some cases that this plan of treatment does not relieve, or if temporarily relieved have recurring attacks. They develop large pus tubes, localized peritonitis, profuse yellowish discharge; the patient is an invalid or semi-invalid. Such a case is surgical. To only remove the pus tubes is only removing a part of the diseased tract. We believe it is better where surgery is indicated to remove the tubes, ovaries, body of the uterus and cauterize the cervix.

## SURGICAL TREATMENT OF GONORRHOEA IN WOMEN\*

F. A. HUDSON, M.D.  
ENID

At the last meeting of this society I had a paper on this same subject. It was written the day before and contained only my personal views. The men who discussed it did not agree with me to any noticeable extent. I neglected to have it typewritten and returned to the chairman, so it was not published.

This year, when asked to write on some gynecological subject, I decided to come back with the same thing in hopes that some of my old friends in this section might disagree with me again.

I will begin by quoting Pugh in physical therapeutics, "gonorrhoea causes more widespread suffering among women than any other disease." This may not be true, but it is not far from the truth.

I am not discussing the treatment of gonorrhoea itself, but only its surgical treatment.

Stop the infection at the cervix if you can. Treat the patient with her first attack of salpingitis expectantly. She may recover and if she changes her habits and avoids further infection and if careful and persistent enough in treatment she may not have further attacks. Probably a girl of good family and habits should be given more conservative treatment than another whose habits and surroundings are the reverse. There is, at least, some chance of cure with resumption of tubal function in the one and much less in the other.

On the other hand Bonney advises early operation on the ground that it gives a better chance of saving the ovaries, and Royston, writing in the American Journal of Obstetrics and Gynecology, states that early operation in the long run will result in greater conservation of tissue.

Mason states that he advises operation when a tubal mass is palpable and where palliative measures fail to give relief.

Strong, in the Journal of Indiana State Medical Association, says, "If the first attack subsides with little evidence of disease, do not operate. Recurrent attacks are treated less conservatively. Operate

at once on the subsidence of acute symptoms. The treatment of chronic salpingitis is purely surgical to effect a cure."

Keen states that in the interest of ovarian conservation, "It is often wise to operate before too much damage has been done."

Recently we see claims of cures in almost any stage by various systems of treatment and by physical therapeutics. Personally, I think these cases come under three types:

1. Those in which the extent of damage done is overestimated.
2. Those who go on in time to a sterile hydrosalpinx with very much relief of symptoms.
3. Those in whom there is a palpable mass, the mass being a cellulitis and not salpingitis. Mild and early cases without sealing of tubal ends have always had some percentage of recoveries and the worst cases have always had a percentage which in time becomes more or less quiescent.

Again quoting Royston: "Pyosalpinx may be a source of focal infection. Tubal infection ranges from a mild complaint to a severe constitutional disorder. Febrile manifestations occur without local pain, various arthritic affections, headaches, napeaches, backaches and various unexplained fevers may come from an unexpected pyosalpinx. Pain is no index to the extent of lesion or degree of infection.

It appears rather peculiar that some of us advise removal of every possible focal infection, tonsils, teeth, appendix, gall bladder, but insist on leaving a diseased tube.

I have found a rather apt description of the pathological changes which occur as a result of tubal infection and will quote it: "Pathological changes in the tube are first limited to the mucous membrane, increasing its folds and bringing about infiltration which spreads to the muscular coats, separating its layers and changing them into fibrous tissue. The cilia are destroyed, the abdominalostium closes, and adhesions form. This may be temporary, but usually results in a permanent pyosalpinx. The muscular coat becomes elongated and extends beyond the fimbriae which retract and become invaginated into the tube. If both ends are sealed perforation is liable to take place into the broad ligament or pelvic cellular tissue, into the ovary forming a tubo-ovarian abscess or

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

the abscess may rupture into the abdominal cavity, though rarely, or by reabsorption form a hydrosalpinx."

Of course, the massive tubo-ovarian abscess with tubes, ovaries, uterus, bladder and numerous coils of intestines matted together are admittedly surgical. I, myself, believe that the case which has had repeated attacks, or one attack with fixation of the uterus and palpable masses in the pelvis is a surgical case. I believe the percentage which returned to normal is much too small to warrant subjecting the majority to the risk of massive involvement with its operative mortality or to the handicap of semi-invalidism with risk of disseminated infection and no hope of fertility. It is well known that most any tubal infection in more or less time can be symptomatically cured for a time. So can duodenal ulcer. I am convinced that like the ulcer case many cases believed by the physician to be cured have simply tried a new doctor on return of the symptoms.

I have operated cases which have been cured by five or six different physicians, most of whom still believe the patient cured. Reports of cure are very untrustworthy unless the patient has been followed up quite intimately for a long period.

The patient will herself be quite sure to prevent too early operation. It is generally agreed that she should not be operated during the acute stage. After this she feels too well to consent to operation. She is liable to feel the same way in the interval after the sixth attack. She may not get the proper treatment, she probably will not get any treatment unless she is uncomfortable, but she will see herself that she takes plenty of time. Repeated attacks are necessary to convince her that she should be operated at a time when she feels comparatively well. She is afraid of operations as are the public in general, and she has a terrible dread of the effect of the removal of any of her pelvic organs and this is usually not the dread of losing the reproductive function—sometimes yes, but usually not. She has been told that she will get fat, develop a bass voice, perhaps grow whiskers, go crazy, and be unsexed. The majority of them still believe in some such results and so do many physicians apparently.

What should an operation for salpingitis amount to? The idea is, of course, to remove her symptoms and also to eradicate the infection..

The cervix is always infected—remove the mocoosa of the cervix with some such operation as the Sturmdorff or use the actual cautery. Suit yourself. The Bartholin glands and Skeens ducts are apt to be infected; if so, destroy them. If the fimbriated ends of the tubes are open there has usually been no indication for surgery. If they are sealed the tubes should come out. Both tubes are usually involved, but perhaps unequally. If one is in a questionable condition it had better be removed. It is much more liable to get worse than better. If the woman wants more children and is willing to take a greater chance of further surgery in order to preserve a smaller chance of pregnancy, all right, let the tube you are not sure about remain, but have it understood.

A woman is too liable to insist on leaving everything which simply does not have to come out and then say very unkind things about her surgeon who follows her instructions when she has to have her next operation.

Quoting Munde, from International Clinics: "There have been many operations that, when at the request of a patient who desired children, and was satisfied to take the risk of a second operation, and the tube has some slight infection, has been left. If such a tube is not removed it will usually cause trouble. The probability of pregnancy is remote, and if it does take place, will probably be extra-uterine."

You know it has come to be an axiom that one operation means two or three more, and so it would seem to be. The more conservative the operator, the more operations until everything is out and then, if she does not have too many adhesions or ventral hernias, she will probably be all right.

Now, in regard to ovaries: After the tube is removed the ovarian circulation is interfered with. The removal of the uterus with preservation of tubes and ovaries is a much more satisfactory operation from the standpoint of the ovarian conservation than is removal of tubes with preservation of the uterus and ovaries. If the ovaries have become part of the abscess wall they should be removed. If they are badly adherent they are almost sure to drop back and again become adherent, become cystic and cause much trouble. If the tubes are removed and the ovaries normal, they are too apt to cause trouble later.

The best argument for early operation in those cases is operation before the ovaries become involved. This gives a better chance to remove the tubes and conserve one or both ovaries. Attempts to conserve fragments of diseased ovaries in the presence of disease in the pelvis will get very unsatisfactory results. Resection of part of an ovary is not a very satisfactory procedure in an uninfected pelvis or under any circumstances.

At best, attempts to conserve ovarian tissue in the presence of tubal infection of such a nature as to require removal of the tubes is not a highly satisfactory procedure and personally, I do not think the operator should go to any great extreme in this direction. The chance of pregnancy is gone with the tubes. The removal of ovaries is about as serious to the patient as the surgeon and she think it to be.

In regard to the uterus, of course, something should be done to destroy infection or remove it from the cervix. But what is the use of leaving the uterine fundus in a woman who is sterile. Even if, as my friend, Dr. Pigford, stated last year, the gonococcus cannot live in the fundus, nevertheless it does harbor some infection and remains inflamed and it does in many cases cause trouble. Further, a cleaner operation with less surface for adhesions can be done if the fundus is removed and it takes very little longer. So why leave it? If the preservation of the menstrual function is as important as some men believe, this woman will menstruate from the cervix if she has ovarian tissue. But I think again that the menstrual function is about as important as her doctor and she believe it to be.

Some time ago I saw a report from a large eastern hospital concerning the end results in followed up cases of various procedures and by far the best results were obtained where everything was removed.

Keen states that supravaginal hysterectomy and bilateral salpingo-oophorectomy will cure nearly all the cases but that the end results due to sterility and artificial menopause are often disastrous.

Hulett, writing on the induction of normal menopause after oophorectomy, and after discussing the medication, says: "The resumption of normal sexual relations is advised as soon as surgical recovery will allow. The patient is urged to resume her normal habit of living as soon as possible."

Please remember this quotation as I shall want to refer to it later.

We will have to admit that the surest way to eradicate this disease is by radical operation. We are, however, faced by two things: sterility and the menopause. Sterility, we can discard. She is sterile in most cases anyway. If the artificial menopause has such dreadful symptoms as it is supposed to, the patient had better remain ill. But, does it?

Our remote ancestors worshipped the sexual organs. We still regard the pelvic organ of the female with a kind of superstitious reverence. Women without them imagine themselves ruined, and we as physicians, encourage them in this belief. Please understand that I think a woman is better off with these organs if they are at all normal. So do I think a man is better off with both legs, but sometimes he is better off with one leg, and in the kind of cases which I am discussing, that is, a well established pelvic infection, she will be much better off without them. And, since it is often necessary to subject the patient to radical surgery, it is quite fortunate that this is true, that is, that the results are not nearly so disastrous as is commonly believed.

Subject a patient to a major surgical operation, which is not a nice experience at best, an operation which she has always been led to believe will ruin her as a woman, encourage her in this belief by believing it yourself; let her have a few hot flashes and if she is inclined to be a neurotic, results will surely be disastrous.

If, on the other hand, she is not told what has been done until after recovery, and is then assured that she has lost nothing since she was already sterile, and put stress on the fact that she is not unsexed, and as Hulett says, urge her to, as soon as possible, to resume her sexual and other habits of living. Then, results will not be disastrous. She will be free of pain, her symptoms from absorption and her infection. She will find that she is not unsexed, and, if this has been stressed, she will, after this discovery, believe what she has been told. She will have some hot flashes. This will be more pronounced in women nearing the menopause than in younger women.

When a patient, after operation, mentions hot flashes, I tell her that these are a little annoying, but will pass away after

a bit, but if they bother her too much I can give her something for them. The patient rarely thinks it of enough consequence to want the medicine.

If this policy is followed up the only patient who will be neurotic will be those same people whom we always have to deal with, who are fundamentally afflicted with some neurosis. We all have these cases. I think the tendency in such cases, where the woman has been operated, is for the doctor, without any study of the patient or her history, to blame it on the operation.

I can remember when I was a boy that cigarette smoking was regarded as a very terrible thing, and in every boy who smoked this habit was regarded as the etiological factor in anything which might happen to him from T. B. and pernicious anemia to insanity, and the peculiar thing is that the medical profession of that day, without much thought, acquiesced to the views of the general public.

*To summarize:* Cure the patient if you can. Give her plenty of time. Do not operate at the first attack. She will probably take plenty of time herself. But when these cases become frankly surgical and the patient finally consents to operation, do not be too conservative. As we are not prophets and cannot pick out the occasional case which may regain function we have to take the course which gives the best percentage of end results and conservatism, you will find, will give a greater percentage of continued ill health and cases for further surgery. If the patient is allowed to believe what the good ladies of her neighborhood tell her the results are sure to be disastrous.

On the other hand, if she is made to believe that there will be no such results, there will be none. I have followed this up in over a hundred cases, and I know it to be a fact.

#### THE POSTERIOR URETHRA\*

O. R. GREGG, M.D.  
ENID

The posterior urethra, or I think I should call my paper the neglected posterior urethra. I believe as a general proposition that the general practitioner has very

little conception of the anatomy of that portion of the urinary canal, that lies between the anterior leaf of the triangular ligament and the bladder, and to some of us urologists the mental picture is rather hazy. This very unfamiliarity is the cause of much lack of treatment of these important structures. If we have no conception of the normal condition, how then, can we expect to treat the pathological. I think that in the physicians' offices in Oklahoma that close to twenty-five per cent contain a straight endoscope, but few are the posterior tubes. How many times does the urologist view the verumontanum in comparison with the number of times he visualizes the trigone.

The posterior urethra is divided into the prostatic and membranous portions. The portion that lies within the prostate is about an inch in length and is lined with transitional epithelial cells, similar to the bladder in the beginning, but becomes more of the columnar type as the tube approaches the apex of the prostate. On the floor we find that elevation of mucous membrane, the verumontanum on which are the openings of the ejaculatory ducts, and generally about midway, we see the opening of the sinus pocularis. On either side of the verumontanum are the prostatic sinuses, ranging in number from thirty-five to sixty.

The membranous urethra lies between the two leaves of the triangular ligament; is less than half an inch in length and surrounded by the compressor urethrae and accelerator urinae muscles, both voluntary. Cowper's glands lie beneath the urethra on either side, just back of the anterior leaf of the triangular ligament.

Stones of the posterior urethra are quite common, probably have their origin in the upper urinary tract, and have simply found lodgement in the membranous folds of the urethra. However, diverticulæ, and suppurating blind pockets, may be the beginning of some calculæ. I do not believe that strictures are ever the cause of the formation of calculæ. Often diagnosis is made only when the stone pushes into the canal, enough to obstruct the flow of urine. The metallic feeling against the sound, aided by palpation, will diagnose. If necessary, use the X-ray.

Malignancies of the posterior urethra are quite rare, confined to the membranous portion, and are usually not diagnosed until the growth obstructs the urinary

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

flow. Then, of course, it is too late to obtain the best results..

*Syphilis.* It is highly improbable that the spirocheta would propel itself up six inches of closed mucous tube to reach the membranous urethra, and form an initial lesion. Gummata, however, I feel, are much more common than we are led to believe by the various writers. The author has had two cases in private practice, within twelve months. One was a truck driver, age 21, about half Indian blood. The other was an oil field worker, white, age 28. The first case denied initial lesion and had a negative Wassermann, until after two shots of neo were given. The latter admitted initial lesion, and had positive Wassermann. The symptoms that brought both of them to me was the profuse hematuria after urination. Both complained of extreme weakness, which they thought was due to loss of blood. One had a general adenopathy. Diagnosis was made with the McCarthy straight cystourethroscope, and the solution kept running during examination. No pain was experienced on urination, and little on instrumentation. One lesion was situated on the floor of the membranous urethra and practically filled the space. The other was in front of the veru, and smaller. Both were dark blue, elevated, and had craters that were reddish and bled at the least touch. Both cases cleared up upon administration of neo. I examined the first case on the 7th, the lesion was smaller, and on the 15th was gone, leaving whitish elevated ridge in its place. The other case I examined on the 10th day only, and the lesion was practically gone, leaving whitish area behind.

I think it is improbable for the bacillus of Ducrey, to localize in the anterior urethra, and believe it impossible for a chancroid to develop in the posterior portion, and as far as I know, there are no cases reported.

*Gonorrhoea.* In acute posterior urethritis your symptoms and treatment are the same as you would use in treating acute anterior urethritis. I wish to say at this time I have no specific to offer. Does it get under your skin to attend a medical meeting and have some one say, "Doc, how do you treat clap?" Urological meetings have a lot to say about the lack of standardization in the treatment of gonorrhoea. Well, what of it? Are we looking for a Houdini with a "presto change," and your G. C.'s

are dead? Is pediatrics unscientific because a man in St. Louis feeds the babies on lactic acid milk while one in Chicago gives Mellins' food and orange juice, or is obstetrics non-progressive because a teacher in Buffalo does versions, while in Los Angeles forceps are used? Have I a right to question Young's results with mercurochrome, Cabot's results with acriflavine, or Walbarst's experience with the silver preparations? No, gentlemen, again let me state there is no specific to date. I have used acriflavine as an injection, in 1 to 1000; I like it better in much weaker dilutions. I have had splendid results with mercurochrome as an injection, and I have aborted cases with clozene. Walbarst uses neoreargon, a newer silver glucoside, and says he has splendid results in five per cent solution. *The principal of injections, whatever they may be, is to kill some organisms and produce an unhealthy habitat for the remainder, bearing in mind that it don't take much of a chemical to irritate an inflamed urethra.* An inflamed urethra makes an ideal nesting place for Neisserian bacteria.

During the past summer I spent considerable time in a large venereal clinic, and the number of Neisserian positive smears on patients with discharges of three, four and five years' standing, was amazing. Just why is this condition? Gentlemen, I believe the fault is with the doctor. Instead of making each case an individual study and treating accordingly, he is trying to find a kimona-like remedy that will cover everything. *The sooner the doctor is taught to treat pathology, instead of "clap," the sooner will these long standing discharges cease to be.*

Quite a number of chronic discharges are due to strictures in the membranous urethra. Just behind them will be found masses of granulation tissues that are infected, bleed easily, and constantly throw off enough pus to keep the discharge active. Gentle dilatation will work wonders here, and if this is your only point of infection, the cure is spontaneous.

Failing to find a reason for a chronic discharge in the membranous portion, we may pass back to the prostatic urethra and take a look with the cystourethroscope. We see the verumontanum; note the utricle, and on either side, the ejaculatory ducts. Time and time again have I seen pus oozing out of the ejaculatory ducts, when the remainder of the urethra would

be absolutely clean. That being the case isn't it the logical thing to treat the ducts and vesicles? I have never had a lot of luck in catheterizing the ducts. I think I do more harm than good, in traumatizing those structures. I resort to the simple operation of vasotomy as described by Belfield, and my cures are a hundred per cent if there is no infection, other than the ducts and vesicles. Personally, I like the mercurochrome and lots of it for my solution, but have had satisfaction with silver nitrate and collargol.

Frequently with the scope you can see inflamed mouths of the little prostatic sinuses, and if the prostate is the soft, spongy type, by doing a gentle massage with the instrument in place, you will be able to see pus escaping from the minute openings. I believe most writers give the number of the sinuses as about twenty-five to thirty-five. In the past year and a half I have examined eight autopsy specimens with the following results: two had sixty, one had fifty-seven, one had fifty-six, two had forty-eight, two had thirty. All these specimens, except one, were from persons past fifty years of age. As they were paupers, it is probable that most of them had had syphilis and gonorrhea. To get back to our subject: In the large, hard type of prostate, the reason for not being able to express pus from the sinuses is that the mouths become plugged with infected material or a fibrosis of the walls, caused by inflammatory processes. In this condition, diathermy applied through the rectum will help materially toward drainage. If there has been a marked fibrosis of areas of the prostate, I use sodium iodide, 31 grs., every day or every other day, and have obtained the best of results. An occasional stretching with sound or Kollman dilator will aid in these cases, if care and judgment be used. Silver nitrate ten per cent applied to inflamed areas is indicated and does good work. In all these prostate cases an irrigation applied directly to the area is the treatment par excellence. Formerly I used the syringe with catheter attached as described by Cabot. Lately, I have been using Wolbarst's method of treatment, through the irrigating system of the cysto-urethroscope, and get a lot more fun and do better work when I am able to see just where my solution is going.

Lowsley and Kirwin state that cysts of the urethra, except in tuberculosis, are exceedingly rare. I agree as far as the an-

terior urethra is concerned, but in the posterior urethra they are either in error or I am seeing too much T. B. Frequently, I see cysts on the roof of the urethra, just back of the neck of the bladder, in old post gonorrheal subjects, and several times I have observed them on the roof over the verumontanum. They are more prevalent at the bladder neck and generally decrease in number toward the veru. Most of them are small and somewhat resemble the glistening dew drops of cystitis cystica, but have had three cases that the cysts obstructed the flow of urine. These were not polyps but were true cysts filled with fluid. The past year I examined one post mortem specimen that had a cyst on the floor of the urethra, and was the size of a small pea, contained clear fluid and a small calcareous granule. My cases have all had a history of gonorrhoea, as well as had the autopsy specimen. There were no cysts present in the bladder. Lazarus states he finds them in non-specific cases as well as specific. I have not observed enough patients with a negative history for gonorrhoea to be able to dispute his claim. My treatment has been vigorous massage with the Kollman or a large sound in place. Failing to obliterate in this manner, I puncture and follow with silver nitrate.

In old post gonorrheal urethras that have had a discharge for several years we frequently find wart-like growths of granulation tissue. These bleed easily, and are very friable. Are the results of old gonorrheal ulcers. I think these are frequently mistaken for papillomata. I have never observed a true papillomata in the prostatic urethra. Treatment is rough massage over Kollman dilator or sound followed by silver nitrate.

There are certain chronic cases of discharge due mainly to lack of resistance on the part of the individual. It is here that a foreign protein injected a few times gives splendid results. Milk seems to be the most popular. I like Aolin. Have had some good reactions and some splendid results. The reports of Potter and Redewell on their milk-mercurochrome-glucose injection is flattering. I have used it in four hospital cases only, but the results have been good. As far as the urethritis is concerned, vaccines, both commercial and autogenous, have been disappointments.

In closing, let me call your attention to the importance of focal infections. Every layman is now educated to the place that if he has rheumatism he immediately

thinks about his teeth, and tonsils, but how few urologists will consider that these same infected teeth and tonsils prevent urethral discharges from clearing up. Let me give you a tip. Try clearing up the sinuses, teeth and tonsils on some old chronic G. C. that has been the rounds. Gentlemen, there will be some agreeable surprises.

### CONCLUSIONS

1. With the use of the modern cysto-urethroscope both diagnosis and treatment of urethritis can be greatly improved.

2. That when we treat more pathology and less gonorrhea our results will be more satisfactory.

3. Cysts in the posterior urethra are common and are not, as a rule, T. B., but the result of chronic gonorrhea.

4. The use of foreign protein and the removal of focal infection will cure some discouraging urethritis.

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*Discussion:* ELLIS MOORE, M.D.

I think it is remarkable how profound an influence comparatively insignificant lesions in the posterior portion of the urethra may have upon the entire organism of man. But when we consider that most of the nerve endings of the sexual centers, as well as those of urination, are located in this region, and remember that the activity of no other centers have a more wide spread effect, we can understand why anything interfering with their normal function must necessarily give rise to more or less general disturbances.

Consequently the most prominent symptoms due to such lesions are often vague, and in no way indicating the area involved.

For example, nervousness, insomnia, indigestion, headache and neurasthenia are often caused by certain inflammatory processes in the posterior urethra.

It is quite common for pain of a dull aching character in the lumbar, sacral suprapubic or perineal region, radiating downward along the thighs or to the testicles to be traced to pathology in the prostate and verumontanum.

Other sexual symptoms may predominate when there is blood stained seminal fluid, dull aching in testicles and perineum following intercourse or ungratified sexual desire. Premature or hair-trigger ejaculation, diminution or complete loss of feeling during ejaculation together with a partial or complete impotency are often attributed to posterior urethral inflammation.

There are many other cases of prostatitis of low grade intensity which are due to non-specific conditions. The high strung individual, the neurasthenic and the previously healthy young man who has frequent and prolonged petting parties form no small per cent of the cases complaining of urethral discharge, backaches, stone aches, etc. These latter cases are amenable to treatment but the neurasthenic types certainly tax our ingenuity to the utmost.

The detection and diagnosis of such pathology can be done only by inspection of these parts after a good history of the case has been made. Gentleness is my plea during the examination. Any water dilating urethroscope is good to use in such cases. I prefer the McCarty Foroblique as I get a more perfect view of the urethra. Also many operative procedures can be carried out under vision.

The gross pathological findings in the posterior urethra consist in congestion mainly; there may be seen dark red globular patches or areas resembling a red and white flower carpet. From these areas may spring papillomata, fibrous, villous or glandular. These growths may be removed by the rongeur forceps, chemical or electrical cautery. The most common practice is by electric fulguration. This method destroys the tissue for a pathological section, however.

Bugbee has called attention to congenital hypertrophy of the veru, citing a case of his own and reporting seven cases found at autopsy in which obstruction at the vesical neck with hydronephrosis and hydro-ureter that had been caused by a hyper-

trophic veru. This congenital defect is something new to some of us but we all know we have seen symptoms typical of prostatic hypertrophy where the prostate was negative but the veru or intra urethral obstruction was to blame. One other point I'd like to mention is that most of us regard the veru as an indicator or mirror of the seminal vesicles. Here is where I think we make a mistake. It has been my experience that the pathology might lie higher up in the bladder, prostate itself, ureters or even in the kidney. These organs must be treated before the patient can be cured.

*Treatment.* The treatment of most of these cases has been well given. Treat the pathology because we must rely upon a healthy membrane or tissue for a cure. This depends upon the pathology of the entire urinary tract. And it is well to consider the general condition and behavior of the patient. Attention should be given to the diet, habits, sexual hygiene, all of which go to build up or tear down the constitution. If the kidneys or bladder are involved certain appropriate measures are taken, while all cases are given local attention to the prostate and seminal vesicles. If the veru is swollen, congested and bleeding, topical applications or silver nitrate 20 per cent gives good results. Massage of the prostate and seminal vesicle followed with a cold sound and bladder irrigation 1:10,000, Ag. No. 3 alternated with potassium permanganate 1:5,000 or deep instillations of the mild silver compounds is considered by some as a standard treatment. Hot irrigation and hot sitz baths are relieving to the more acute type. Alkaline diuretics, the balsamics and antipyretics are used internally. Of course there are many cases of localized posterior inflammation that will not yield to the above treatment even though we persist in it. For such cases I do not hesitate to use the electric cautery. This may be repeated in ten days. Meanwhile it is advisable to proceed with the above palliative measures.

### THE PENILE SORES\*

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The subject of penile sores covers a large field and at this time we will only attempt to discuss the two principal ones,

namely, the chancre and chancroid, also spoken of as the hard chancre and soft chancre or venereal sore respectively by the layman.

According to the statistics of the Venereal Disease Bureau of the Oklahoma State Health Department, only about 59 per cent of the physicians evidently are recognizing these lesions; as 41 per cent of the physicians are not reporting them. During 1927 there were only 2,063 chancres, and only 32 chancroids reported from this state.

Of the penile sores 75 per cent of them are syphilitic, and all syphilitic sores are by no means typical chancres, varying as they may from an abrasion easily overlooked to an indurated sore. A chancre may vary in size from a pin point to that of a dime or larger. In primary syphilis we have the initial lesion or chancre, and it usually makes its appearance on an average of about 25 days after the person has been exposed to an infection, although this period may be much prolonged and in some cases may occur earlier. The chancre may be hidden from view by a swollen foreskin which can not be retracted or it may be located within the urethra or on the neck of the uterus.

Approximately 18 per cent of genital chancres are multiple, and this fact should put one on guard in believing penile sores to be nonsyphilitic because they are multiple. Multiple infections may occur at the same time if there are several abrasions on the genitals, and cases have occurred where the erosions caused by the itch parasites have become infected at the same exposure.

Chancres may be located extragenitally, especially on the lip, neck, tongue, tonsil and fingers. Wherever a one sided painless enlargement of lymph glands occurs, as in the cervical, axilla or epitrochlear, it is advisable to look on the lymph shed of the affected area for the lesion through which the infection entered. Fournier estimates 8 to 9 per cent of all chancres to be extragenital. Other authorities estimate 5 to 6 per cent.

The early detection of a chancre in order to give adequate treatment promptly, is one of the most important control measures; and the time to make the early detection is in the primary or initial stage, long before the general eruption on the skin or mucous membrane of the mouth appears. Dark field examinations of mater-

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

ial taken from the lesion or by puncture of the enlarged neighboring lymph glands and repeated Wassermann blood examinations taken subsequent to the 17 to 21 days after appearance of the lesion are measures which have been found to be very useful in the early diagnosis. Every penile sore should be regarded as syphilis, provisionally, until proven otherwise by careful examination.

The chancre is the first recognizable syphilitic lesion. It begins at the point of contact or inoculation. The blood reaction after a rather prolonged but indefinite period of incubation begins a macule which develops into a papule. This papule grows to a size dependent upon the virulence of the organism, resistance of the tissues, the site and mode of inoculation, degree of secondary infection and intensity of the local reaction. The size of the chancre may vary from a millet seed to an ulcerating tumor mass 10 cm. in diameter or a plaque involving the entire anterior aspect of the scrotum. Then a local edema followed by lymphocytic infiltration gives the papule an unusual shottiness and induration. There are plasma cells in the infiltration and some fibroblastic proliferation. The peripheral obliterative endarteritis results in a superficial necrosis and epidermal surface is destroyed, and at times may give rise to a definite slough. Usually, however, an uncomplicated chancre is an eroded rather than an ulcerative lesion. In typical lesions this erosion yields a serous exudate which on exposed surfaces forms a thin, grayish-yellow, slightly hemorrhagic crust. The base of the erosion or ulcer is smooth. The border is usually regular and smooth, not raised, rolled, scalloped or pearly. A distinct hemorrhagic or dark red line can often be seen around the margin of the erosion. The lesion is usually painless, but this deceptive characteristic cannot be trusted at all times. As the infection spreads locally from the site of reaction, various important phenomena, as local lymphadenitis and sometimes lymphangitis appear. With progress of the local reaction, healing and fibrosis slowly sets in. The epidermis rapidly regenerates over the erosion and a healed plaque remains. The lymphocytic infiltration which gives the plaque its induration, subsides much more slowly than the healing of the erosion and may remain for some time to mark the site of the active lesion. Spirochetes are present in the deeper portions of this infiltration and

neighboring vessels, representing the remnants of the organism destroyed by tissue reaction. The induration finally subsides leaving no trace of the chancre, or there may remain at most only the most superficial and minute scar. An impression that a conspicuous scar means a previous chancre is a widespread error. The uncomplicated chancre seldom leaves a definitely recognizable scar in tissues which are naturally lax and flaccid.

Physical characteristics of the chancre are as follows:

1. The chancre tends to be single rather than multiple although frequently it is multiple.
2. It has a relatively long incubation period, 12 to 40 days.
3. The lesion, if uncomplicated, tends to be relatively painless, chancre of the finger may be an exception.
4. There is induration of the base of the lesion.
5. Erosion of the surface is usual rather than ulceration.
6. The border tends to be sharply defined, with a fine hemorrhagic line at the periphery, and is not undermined, ragged, or necrotic in uncomplicated cases.
7. The base tends to be clean, with a faint grayish pellicle, or a raw muscle color.
8. The exudate is serous rather than purulent.
9. The chancre tends to be indolent and to run a slow course, 3 to 8 weeks.
10. A painless, non-inflammatory, discrete enlargement of the adjacent lymph nodes, usually bilateral, develops after the first appearance of the lesion, and in about 70 per cent of the cases.
11. An exception to the bilateral character of the satellite adenopathy is the extra-genital primary lesion in which the adenopathy is usually unilateral.
12. On healing, a thin atrophic, often practically invisible scar, remains.

In diagnosing a chancre the outstanding features are long incubation, indolence, slow course, and satellite adenopathy.

The chancroid differs from the syphilitic chancre in its irregular outline, its rugged surface, by suppuration and yellowish exudate covering the lesions. Especially is noted the undermined edges, which are sharp and marked by a fine edge of yellow color, composed of necrotic tissue. The base of the chancroid is sometimes indu-

rated, but never as extensively as the chancre. It is usually multiple, due to its auto-inoculability, although it frequently is single. The glandular enlargement may be very extensive and then may suppurate, or there may be practically no glandular involvement. Pain is more pronounced than in the chancre, although at times there may be none. In lesser degrees of involvement, the glands are painful only on motion. More extensive involvements with periadenitis, the glands become matted together into a tender mass adherent to the skin and inflamed. Usually the glands are painless with no peri-glandular exudate and the skin is always movable over the mass. Under the microscope we find the bacillus of Ducrey in the exudate. The chancroid usually appears under 10 days and frequently in 1, 2 or 3 days, following exposure. However, a syphilitic infection may occur in the same lesion and we should also examine the lesion for *Treponema pallidum*. The chancroid is not as indolent and heals faster with local treatment, but is capable of destroying much tissue locally if neglected. Here we should also run the blood Wassermann, as well as dark fields, to aid in the diagnosis.

### ELUSIVE ULCER OF THE BLADDER\*

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In 1913, Hunner described a condition of the bladder which he called elusive ulcer.

Many years before him, Nitze and Hugh H. Young, and no doubt, other keen observers had noted this peculiar type of bladder pathology; but it remained for Hunner to regard it as a separate disease entity, to place it before the profession and devote to it the serious study from an etiologic, pathologic and therapeutic standpoint, that its importance deserves.

Other terms have been suggested such as submucous ulcer by Neisser and Bumpus<sup>1</sup> of the Mayo Clinic and panmural circumscribed ulcerative cystitis by F. E. Keene<sup>2</sup> of Philadelphia. While these terms have much to recommend them because of their descriptive value, the condition will probably always be known as the elusive ulcer of Hunner which, to my notion, is fitting and proper.

*Etiology*—Hunner<sup>3</sup> concluded that distant focal infection was the most likely etiological factor. Certain findings and certain developments would seem to lend strength to this view. When seen before secondary infection has taken place the urine is usually crystal clear and the microscopic findings either entirely negative or showing only an occasional erythrocyte or pus cell. Such would hardly be the findings were the condition dependent for its source upon some infection within the urinary tract such as a chronic pyelitis, when we would expect pus cells to be rather consistently present.

Hinman succeeded in reproducing the lesion in dogs after the intravenous injection of a streptococcus, obtained directly from an excised human ulcer while Ros-enow had a similar result by using an organism cultured from an apical abscess in a patient with elusive ulcer. In 1921 Meisser and Bumpus reported an interesting series of experiments. They injected animals with organisms obtained from teeth or tonsils of elusive ulcer patients; of 33 animals injected, all but a few developed lesions in the urinary tract and most of these only in the bladder. They contrast these results with those obtained in another series of experiments when only 10 animals out of 239 developed lesions in the urinary tract when injected with streptococci obtained from the tonsils and teeth of patients having other than urinary infections.

These investigators offer the suggestion that a blood-borne infection may have a superficial bladder localization when a generalized cystitis will be the result or the process may in some cases be more strictly localized with the formation of a solitary ulcer and lastly that the deeper layers of the bladder wall may be the principal seat of involvement with elusive or submucous ulcer as the resultant lesion.

Such experimental results as these by competent men would appear to be highly confirmatory of Hunner's focal infection theory. The one valid objection to this theory is to be found in the fact that a very large majority of cases of elusive ulcer reported have been in women whereas focal infections should be of practically equal frequency in the two sexes. In 1926 Kretschmer<sup>4</sup> reported forty-four cases, forty being in women and only four in men. This objection may be more apparent than real and time may show a larger male incidence.

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

*Pathology* — The pathological findings are those of a chronic inflammation of all the coats of the bladder with a marked tendency to fibrosis in the submucous layer.

The involvement is usually more marked in the deeper layers of the bladder wall than in the mucosa. This is another point, as mentioned by Meisser and Bumpus, which suggests that the source of the infection must be looked for outside the urinary tract. A thickening of the bladder wall is present in all but recent cases.

*Symptoms*—Unlike many other diseases of the urinary tract, the symptoms of elusive ulcer always attracts attention to the seat of the trouble. Pains in the region of the bladder has been a feature of each of the six cases I have had the opportunity to observe as well as in all the cases reported in the literature that have come to my attention. Frequency and burning are also practically constant symptoms and were present in all my cases.

It is probable that early in the disease frequent burning urination is the only complaint and precedes the pain some times by several months or years. Such was the history given by one of my patients. Three of the six cases seen by me stated that symptoms were worse just prior to or during menstruation.

Numerous reflex nervous symptoms are frequently present. As the disease progresses all symptoms increase in severity until in advanced cases the suffering of these patients is extreme. A constant desire to urinate almost as marked at night as during the day with only a few minutes partial relief after voiding the constant bladder pain, with the consequent loss of sleep, makes of these sufferers pitiable physical and nervous wrecks.

Many of the cases give a history of having had one or more operations (usually pelvic) without relief of the bladder symptoms. Such was the observations in four of the six of my small series. This has been the observation of other men and Hunner states that a history of previous operations without relief in a patient with long standing bladder symptoms and negative urinary findings is practically pathognomonic of elusive ulcer.

In three of my cases the patient volunteered the information that the bladder pain was accentuated during bowel movements. In some the bladder pain is constant, while in others it is intermittent in

character. In one of my patients there were intervals of freedom from bladder pain of weeks or even months duration. Even during these intervals, however, the urinary frequency persisted.

Palpation over the bladder will often elicit tenderness and this point of tenderness will be found to correspond in location exactly with that of the ulcer as seen through the cystoscope. Urinalysis is entirely negative, or may show a few red blood cells and leucocytes, or, if secondary infection has taken place, many pus cells and a variety of organisms may be found.

*Cystoscopic Findings*—The bladder will be found slightly or extremely resistant to distension according as the lesion is early or advanced. When secondary infection has supervened the usual picture of a generalized cystitis will be encountered, but the usual thing that first strikes the cystoscopist is the paucity of bladder findings which are out of all proportion to the gravity of the symptoms.

The bladder may appear entirely negative, or at most only a small pale glazed area may be seen surrounded by a zone of slight hyperemia. There may be no sign of an ulcer or only a small lesion having the appearance of a punctate hemorrhagic extravasation may be seen in the glazed area.

The examiner should settle down to a most careful scrutiny of the bladder even though nitrous oxide or caudal anesthesia is necessary to accomplish it. The entire bladder should be searched but particular attention should be centered on the anterior wall which is the most common seat of the trouble.

If ulcers are present they are usually linear in type and may be single or multiple. The lesions change from time to time and an ulcer seen upon one occasion may be entirely healed a few days later. It was such features as these no doubt that caused Hunner to select the term elusive ulcer.

Young of Baltimore suggests that these ulcers originate as cracks in the mucosa resulting from distension and explains the tendency to crack by recalling the fibrosis and consequent inelasticity of the submucous layer.

*Diagnosis*—The diagnostic points have been discussed under the headings of symptoms and cystoscopic findings and will not be repeated here. I wish, however, to stress

a few features. We should not expect to find all the classical symptoms in every case. The early case may complain only of frequency and some burning. Nearly all of these patients give a history of having been treated, often by competent men, with the usual remedies employed in cystitis with only temporary or no relief at all. By bearing this condition in mind, we can sometimes find these lesions in their early stages and by proper treatment save the patient much suffering.

We should avoid superficial examinations. These lesions are not always easy to locate. The truth of this was impressed on me at a recent medical meeting when I heard a man of long experience and national reputation admit that he had never yet been able to identify one of these ulcers.

Dr. Hugh H. Young suggests that, as the ulcers are cracks produced by distension, this fact be taken advantage of by overdistingending the bladder at the time of examination to make them stand out.

I wish to speak a word of warning in this connection against too much over distension. In one case that was being cystoscoped under nitrous oxide anesthesia only moderate distension produced such free bleeding that the examination had to be postponed.

A very important aid in diagnosis is the pain produced when one of these lesions is touched with the tip of a ureter catheter. The patient will usually volunteer the information that you have reproduced the pain and the location will correspond to the point of tenderness as found by palpation over the supra-pubic region. Frequently a little blood will be seen trickling down from one of these areas after it has been touched.

*Treatment*—After employing the methods used in the treatment of the various ulcerative bladder lesions without results or with only temporary improvement, Hunner resorted to excision of the ulcer bearing area. This then became the accepted form of treatment until it was found that a fair percentage of these lesions recurred even after so radical a treatment. Another reason for the abandonment of open excision was the advent of fulguration. This has been so successful in the hands of most men that it seems now to be the treatment of choice.

Of the six cases treated by me in the Oklahoma City Clinic, one was treated by

excision eight years ago with permanent relief. The other five were fulgurated with very satisfactory results. Only one has had a recurrence and has again been relieved by the same treatment. One patient is still under treatment and is entirely free of symptoms.

Other treatments have been used such as progressive distension of the bladder, applications of silver nitrate in varying strength and various irrigations but these are usually quite inadequate. I am quite enthusiastic about fulguration and it has replaced all other treatments as far as I am concerned. One extremely important factor in treatment should not be overlooked. Although focal infections have not been proven to be the main causative factor in this condition, the probability of this is strong and a careful search should be made and all foci should receive appropriate attention when found.

Only two case reports will be added, one representing an advanced condition and the other a fairly early one.

Miss L. S., age 23, reported for treatment in 1920. Family history is negative except that a twin sister died of pulmonary tuberculosis one year ago.

*Personal History*—Patient had some pelvic operation performed eight years ago for the relief of painful profuse menstruation and frequent urination. The menstrual disorder was relieved but the bladder symptoms persisted, grew progressively more severe and later developed pain in bladder region which was present most of the time and was worse at menstrual times and also during defecation.

Frequency and dysuria both diurnal and nocturnal but worse when on feet. Treated by a local physician and also in Chicago by various remedies with only temporary relief. States that silver nitrate irrigations greatly exaggerated the pain. Has lost 20 pounds in weight.

*Physical Examination*—Essentially negative except for moderate tenderness to pressure over supra-pubic region.

*Cystoscopy*—Bladder capacity 100 c.c. which distension causes considerable distress. A small irregular ulcer is seen on anterior wall of bladder surrounded by a glazed area and this in turn by a zone of hyperemia. Ureter catheterized. P.S.P. tests normal. Segregated and mixed urines negative. Urine negative for tubercle bacilli.

*Operation*—June 8, 1928. Excision of ulcer area by extra-peritoneal route. Retention catheter in bladder. Catheter removed in eight days.

July 2, 1928. Extraction of first upper right bicuspid tooth, which was found to be abscessed.

Patient was apparently entirely relieved of bladder pain, but developed an alkaline cystitis which proved very resistant and was finally cured by injection of cultures of lactic acid bacilli.

In reply to questionnaire received April 25, 1928, states she is permanently relieved and has gained 26 pounds in weight.

Mrs. J. M. D., age 57. Family history negative, except that one sister died years ago of tuberculosis.

*Personal History* — Usual diseases of childhood. Tonsillitis 20 years ago. Has had some arthritic pains in hands and feet. Mild seasonal hay fever. Eight years ago pan hysterectomy for cancer of the uterus, no recurrence. Menstrual life normal except for year preceeding hystérectomy when there was menorrhagia and metrorrhagia. Patient is the mother of two living and healthy children. Labors normal.

*Present Trouble*—About two years ago began having pain in bladder region of a heavy aching character. Feels as though something were trying to pass. Prior to this had some urinary frequency which has persisted in varying degrees of severity. At present averages 4 or 5 times at night and about as frequent during the day. Pain comes on suddenly more or less independently of urinary act but thinks it is partially relieved temporarily by voiding. Was free from pain for a period of 5 months in 1927, but frequency continued. No hematuria, no weight loss.

*Physical Examination*—Essentially negative except for definitely infected tonsils, two devitalized teeth and tenderness a little to right of median line in suprapubic region.

*Cystoscopic Notes* — Bladder capacity 250 c.c. to moderate discomfort. A slight generalized reddening is seen and on anterior wall a little to the right of median line is seen a hyperemic zone about 2 cm. in diameter in the center of which is a minute hemorrhagic spot. When touched with the tip of the catheter slight bleeding is produced and patient complains of a pain similar in character and location to the pain with which she has been suffering.

Mixed urine, 10-12 pus cells per H.P.F. Segregated urines negative.

*Operation*—Tonsillectomy by Dr. J. C. MacDonald. Two abscessed teeth extracted. First fulguration completely relieved the symptoms and there has been no return in three months.

In conclusion I wish to remind you that elusive ulcer is one thing we should think of in connection with any case presenting bladder symptoms whether all the typical symptoms are present or not. We also should remember that an elusive ulcer may be present as a complication of other urinary pathology such as chronic or acute cystitis, pyelitis and tuberculosis of the urinary tract.

By being on the watch for these elusive lesions we will occasionally find them alone or as a complication of other conditions and by the application of fulguration practically assure the patient relief from a very distressing disease.

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#### LEUKOPLAKIA OF THE TRIGONE\*

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This paper has in view the destruction of the lymphatic vessels with the formation of scar tissue and its pathological significance. Due to the meager literature on the subject, I feel there is plenty of room for further observation, and research work, in the study of this urological syndrome.

The lymphatics of the trigone are formed by two very rich plexuses; one in the muscular; the other in the submucous membrane. These lymphatics also accompany the blood vessels, which are most abundant in the trigone, and are very superficial at this point in the bladder wall.

*Case:* Mrs. M. G., age 34, was referred to me several years ago, her chief complaint was frequency, marked tenesmus,

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

and burning at the end of urination. Physical examination was generally negative, except she was very neurotic. Cystoscopic examination was negative, except on close observation there was a decided redness of the mucous membrane with white petechial spots scattered over the trigone. This patient was treated with fulguration, silver nitrate applications and dilatation of the urethra, with no results. She later was operated for some abdominal condition and died, but was never benefitted of the symptoms from which she first complained.

Mr. E. L. B., age 35, acute gonorrheal infection, responded to the usual silver nucleate treatment in two months. After an interval of several months he returned complaining of frequency, burning at the end of urination and at times tenesmus. Endoscopic examination revealed a granular area just anterior to the verumontanum, which was cauterized with a 25 per cent silver nitrate solution. After severe chills and fever, lasting for twelve hours, he seemed better. (Undoubtedly this chill was a bacteremia and absorption of infectious material from his posterior urethra). Cystoscopic examination two weeks later showed small white petechial areas of scar tissue, in the trigone.

Mr. A. L. W. had gonorrhea one year ago and was discharged by his physician in two months as cured. In the course of complete physical examination by his physician he was referred to me for urological examination. He complained of burning at end of urination and was very neurotic. Cystoscopic examination showed the trigone very red and hyperemic with small areas of scar tissue formation. Otherwise, the examination was negative. There were ten to fifteen pus cells to the field from the prostatic secretion.

I could recite innumerable cases which do not differ materially, from the above selected three cases, in their clinical history or cystoscopic findings.

While in Vienna last summer, in the Professor Blum Clinic, as an understudy of Dozent T. Hryntschak, also Dozent Oswald Schwartz, I had the opportunity to observe and study a great number of clinical cases which came to the hospital for treatment. Both of these doctors agreed that the white spots observed in the trigone are caused by the destruction of the lymphatics, with accompanying round cell proliferation in this area. This causes a decided patho-

logical change in the trigone which is not amenable to any form of treatment, if far progressed. The pathological changes occur in the trigone which take place in the urethra in the condition of furuncle of the urethra. There we find, after a long time, with infectious irritation in the skene ducts, or the glands of the urethra, that there is great proliferation of connective tissue.

The same occurs in the trigone only to lesser degree. It is this destruction of normal tissue in the trigone which causes the symptoms of frequency, tenesmus, and burning sensation at the end of urination. I have never observed bladder leukoplakia outside of the trigone, and doubt very much any such pathological formation in the kidney, outside of the pathology which we find in chronic nephritis.

In the urological department of the algemeinde polyclinic, a urethral suppository of gm. 1 silver nitrate, 4 gm. balsam of peru, and oletheobromate to 100 gms. are moulded out and applied daily into the urethra. Curettements of the trigone is used and they claim quite brilliant results.

I think many diagnosis of leukoplakia of the bladder which respond so satisfactorily to antisiphilic treatment must be a form of bladder syphilis, that we know very little about.

#### CONCLUSION:

Leukoplakia of the trigone is caused by bacterial irritation in the urethra, carried over an indefinite period of time.

The pathological changes are easily recognized in the trigone by observing the small areas scattered throughout the membrane.

The connective tissue proliferation is the result of the destruction of lymphatic vessels.

Early treatment for the elimination of any sort of infection in the urethra is the best prophylactic. When once the lymphatic vessels are destroyed no means of treatment affords any change in the tissue.

There is no medical treatment at the present time which has any influence to remove the destruction already taken place, or affords a relief to the patient from his symptoms syndrome.

## UROLOGIC PROBLEMS\*

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Unquestionably, the most valuable and reliable single method of determining kidney function is by the employment of the P. S. P. test. But one not infrequently encounters frank complaint by the internist and general practitioner that this test is unreliable and misleading. The error has been usually due to inaccurate collections of the urine to be tested for the dye content. If the output of the dye is much below normal, it should be checked by the data of the nonprotein nitrogen content of the blood and sometime creatinin. If the appearance time and percentage of the P. S. P. test is normal then there is no increase in the total nonprotein nitrogen in the blood.

Phenolsulphonephthlein was discovered by Remsen, but Roundtree and Geraghty were the first to use it as a kidney function test in 1910. In Germany and Austria, the indigo-carmin test is usually used, but this dye is very difficult to estimate by Calorimeter.

Ockerblad<sup>1</sup> recommends the injection, intravenously of 0.25 grms. of creatinine with 1 c.c. of phenolsulphonephthlein, he determines the excretion of both and compares their relative values. During the first ten minutes after injection, the urine contains at least three times the normal secretion of creatinin. He states that it has all the qualifications of the P. S. P. test, but believes it more sensitive.

If a reliable laboratory report shows a normal P. S. P. output it may be taken as one of the most nearly infallible tests of any with which the practitioner deals. If markedly below normal the test should be repeated to eliminate error due to faulty collection or sometime a diminished secretion due to inhibition from pain.

The normal output should be about 40 per cent excreted during the first quarter hour, 17 per cent excreted during the second quarter hour, 8 per cent excreted during the third quarter hour, and about 4 per cent during the fourth quarter hour.

If 40 to 65 per cent is excreted during the first one-half hour following the appearance time after intravenous injection, one may dispense with further consideration

of total function. If the dye output by voiding methods is below normal, it should always be repeated with a catheter before final judgment is passed, unless it is checked by reliable blood chemistry findings.

Kearns<sup>2</sup> gives a very interesting resume of kidney function tests. He states that the capacity of the kidney for work is better measured than that of any other involuntary organ of the body inasmuch as the urine is easily manipulated as an indicator of the kidney function.

*Hematuria and Pyuria.* Hematuria means inflammation or some organic disease somewhere in the urogenital tract. Efforts should be made to determine the exact source or sources of the blood or pus, and the pathology causing the trouble. Examination for the source of hematuria should be made immediately, for if we wait until the bleeding ceases, it is almost impossible to determine the cause until another attack ensues. Cysto-urethroscopic examination should never be omitted for the cause or source of the blood, any other method is largely guess work. The one exception is when the blood is caused by acute gonorrheal prostatitis or posterior urethritis.

The examination for hematuria may be very simple, or it may demand ureteral catheterization and complete kidney function tests and double pyelography. The same procedure should be carried out to determine the source of pyuria.

*Renal Tuberculosis.* Any patient between the ages of 15 and 40, with pyuria of an apparently causeless nature over a period of 12 weeks, with a temperature of 99.2, who has had frequency, slight nycturia—perhaps dysuria, with acid urine that is negative for micro-organisms by the ordinary staining methods should be suspected of having renal tuberculosis. One negative examination for tubercle bacilli in the urine does not exclude renal T.B. as one negative examination for T.B. in the sputum does not exclude pulmonary T. B.

The average case of renal T. B. is diagnosed after he has been treated for bladder cystitis for a long period with worthless irrigations, whereas tuberculosis should have been suspected and diagnosed much earlier. The earlier the diagnosis, the quicker, surer and more permanent the results.

If the patient shows no albumin or pus in the urine, it is certain he has no renal

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

tuberculosis, should there be albumin present and no pus, tuberculosis of the parenchyma of the kidney cannot be excluded absolutely. A diagnosis of renal tuberculosis cannot be made until a tuberculous process has reached or extended into the pelvis.

In genital tuberculosis epididymectomy is the usual surgical measure indicated.

*Renal Disease Simulating Abdominal Lesions.* Kidney infections, ureteral stricture, renal calculus and hydronephrosis often give a picture with clinical resemblance to appendicitis, or cholecystitis, or mucous colitis, or even intestinal obstruction. If the urine contains pus or blood or bacteria, urologic examination should not be neglected and even a cystoscopic examination should be performed if the condition permits, or a simple Roentgen-ray should be done which often gives us a clue. Smears from the centrifuged specimen stained by the gram method are far more useful than the culture method.

Obscure conditions, especially those with otherwise unexplained gastrointestinal or abdominal symptoms, should be examined urologically.

Perinephritic abscess can usually be diagnosed by clinical data plus the aid of the Roentgen-ray, if the urologic findings are negative. In suspected cases it is advisable to explore with a small incision, then to wait until an accumulation of pus has formed.

*Catheter Cystitis.* This is a misnomer, very often the nurse and the intern is blamed for this condition when, as a matter of fact, the surgeon in charge should be held responsible for this infection of the urinary tract. The cause for this condition according to Hugh Cabot<sup>3</sup> is distention which brings about a "prepared soil" following which some degree of infection is pretty sure to occur notwithstanding the most rigid aseptic catheter technic.

Day<sup>4</sup> claims that intentional introduction of pyogenic organism into the bladder does not produce infection, even in the presence of considerable trauma if there is present no pathologic condition, active or latent, in the urinary tract and there is no distention or residual urine.

Hugh Cabot<sup>5</sup> discusses this problem on both experimental and clinical data and believes that postoperatively a patient should not be allowed to accumulate more than ten ounces (300 c.c.) in the bladder.

The nurse should be instructed to catheterize the patient at any time after the twelfth postoperative hour. This should be based on the patient's own sensations. Curtis<sup>6</sup> believes that distress should be the signal for catheterization. In all male patients to be operated on over fifty, particularly if the operation be for hernia or hemorrhoids acquired in the last few years, the catheter should be employed to find if the patient has residual urine. If the residual urine is considerable, then an indwelling catheter should be used.

*Pyelitis.* The object of this classification is to emphasize the importance of acute pyelitis in infancy, a common enough disease but frequently overlooked by the general practitioner. This is frequently overlooked because of the indifference to the necessity of examination of the urine of infants. Cases are so frequently encountered that this disease will shortly stand on a parity with otitis media acuta as to its share of responsibility for temperature in the young, especially females.

Most cases begin abruptly with high fever in an otherwise up to now healthy female infant (the majority of cases are confined to females).

There may be convulsions and cyanosis in the beginning, vomiting and acute enteric symptoms are sometimes intense and persistent, there may be diarrhoea.

The urine contains traces of pus and albumin, and is sharply acid in reaction. In 90 to 95 per cent of cases of acute pyelitis the colon bacillus which thus becomes the primal bacteriologically etiologic factor. This organism is present in almost all primary cases. The bacillus exists in pure culture in a sharply acid urine. The diagnosis depends almost exclusively on the results of a urinary examination. A drop of urine or two is sufficient to determine the presence or absence of pus. If there is much difficulty in securing a specimen for examination, a soft rubber catheter 8 to 10 French is readily passed.

*Treatment.* The administration of potassium citrate or any other alkalinizing agent in a dose sufficient to permit the urine to become free from pus and colon bacillus. The effect of citrate is practically specific. The temperature almost immediately commences to fall and unless the drug is withdrawn too early it will not rise again.

Sodium bicarbonate can be used, but too great an amount at too long an interval might cause edema and gastroenteritis.

Caprokol has been used with gratifying results.

Hexymethylenamine is used in chronic cases. It clears the urine for the time being but does not destroy the colon bacillus.

Vaccines may be tried, but must be autogenous and given fresh. In some cases vaccines are helpful; in others their effect is doubtful.

Juvenile cystoscopy and ureteral catheterization are very neglected arts of the genito-urinary surgeon, and need developing greatly.

There has been a good many papers this year on the subject of urological conditions in children and it is encouraging to see an awakening to the great possibilities in a long neglected field.

#### CONCLUSIONS

1. If there is any doubt about the functional P. S. P. test, the data should be checked with the nonprotein nitrogen output in the blood.

2. Immediate examination for the source of hematuria and pyuria to locate the exact pathology.

3. The earlier the diagnosis of renal T. B. the better the prognosis.

4. Urological examination should be performed with obscure abdominal conditions.

5. During infancy and childhood pyelitis is a common disease and more common in female infants.

6. Postoperative cases should be catheterized for residual urine and to prevent distention which brings about a "prepared soil."

7. The use of indigo-carmin and phenol-sulphonaphthalein at cystoscopy and the control of both by blood chemistry has given us much information and saved many lives.

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#### AUTHOR'S CAUTERY PUNCH FOR PROSTATIC OBSTRUCTION\*

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*Mr. President, and Members of the Oklahoma State Medical Association:*

You have given me a great honor in inviting me to participate in the program of the annual meeting of your State Association. For this please accept my sincere thanks.

I have selected to discuss the obstructive lesions at the vesical neck due to prostatic growths, since this topic occupies such an important place in urological surgery and possesses an appeal to many branches of medical practice; and, furthermore, because so many transformations of ideas have occurred in recent years concerning this condition.

The history of prostatic surgery is old and dates back to 1628 when Riolan first demonstrated the prostate as a cause of urinary obstruction. Since this time there has been a gradual progress in the treatment and an increasing understanding of the associated conditions resulting from obstructive lesions produced by diseases of this gland. I shall spare a detailed description of the progress of prostatic surgery through history's pages and will only dwell on some of the high lights which have appeared along the path of its progress.

Since the period of discovery in 1628, many have contributed their part to this study. Some of the outstanding figures are Home, who, in 1806, described the middle lobe, and Mercier, who, in 1821, first incised the prostate for the relief of obstruction. The French, German and British scientists contributed greatly through the early years of development and more recently the American urologists have participated in a creditable fashion to the advancement of our knowledge of the pathological processes within this gland.

The next great period was the one of surgical development, starting with Guthrie in 1834, when he did the first perineal prostatectomy; Amusat, in 1836, perform-

\*Read before the Section on Urology and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1928.

ed the first supra-pubic although McGill, in 1887, is really credited with having given birth to the supra-pubic operation. In 1873, Bottini began his method of intra-urethral removal of certain obstructions by means of cautery blades. By this method, he blindly burned a channel through the vesical orifice and claimed some creditable results. The operation was later modified by Freudenberg and Young. Belfield, in 1890, and Fuller and Freyer, in 1895, followed with technical procedures for the removal of such obstruction. In 1891, Goodfellow developed the perineal operation, which was later improved in an admirable way by Young and Proust. Young, of course, has been chiefly responsible for the perfection of the perineal operation.

In recent years the two-stage supra-pubic operation has received innumerable adherents and is probably the most popular in general hands. Time will not permit a discussion of the advantages and disadvantages of the different surgical technics for the removal of this gland.

I would like, however, to briefly direct your attention to a few points concerning the second stage of a two-step supra-pubic operation. As a rule this phase of the surgery is a blind procedure, done entirely by palpation, without any attempt at inspection of the orifice. For several years it has been my practice to open the bladder with a modified Judd retractor and inspect the internal orifice, start the line of cleavage for enucleation, grasp the prostate with forceps, remove the retractor and enucleate the prostate gland by traction on the clamp in a fashion similar to the single stage operation. This prevents trauma and struggle and makes enucleation very much easier. Following the removal of the gland the retractor is inserted, the orifice is inspected, tags are trimmed away and if there is arterial bleeding it is clamped and ligated. This operation is indeed simple in most instances and serves to protect against mucous membrane tags which are often responsible for delayed healing and also allows proper control and prevention of hemorrhage. In modifying the Judd retractor I have simply made the blades longer and have tapered them so that they may easily be passed into the bladder. In this way the operation is made a visual one and complications are lessened.

In properly prepared patients either one of the supra-pubic or perineal methods is

capable of effecting excellent results in proper hands. Perfections in surgical technic have added greatly to the progress of prostatic surgery. Improvements in anesthesia have shared equally with these technical changes. In spite of the marked improvement in the results of prostatic surgery and the great lessening of mortality I believe at the present time that the general mortality of prostatic surgery is much higher than we all realize. In expert hands and under proper care a general mortality rate of 5 per cent would be a conservative estimate and it appears that through major surgical procedures with all the attendant phenomena that a lessening of this mortality rate is improbable. Therefore, the protection from surgery by regulation during life, or the correction by minor surgery in the incipency of prostatism is the one hope at the reduction of mortality.

It is quite striking that the early history of prostatic disease dealt chiefly with surgery and very little attention was paid to the intimate physiological and pathological conditions associated with it.

The next great period of development we find centering around a concentrated study of the character of the growth at the bladder neck. This was made possible by Nitze, who, in 1879, presented his cystoscope for visualization of the bladder and a new era began in prostatic disease. Through this means surgeons were able to understand the character of the obstruction, its topographical relation, as well as associated lesions in the bladder and in the upper urinary tract.

Great progress has been made since this time in this phase of prostatic study and I shall later call your attention, particularly to recent progress, along this line. At the present day no one, in my opinion, is justified in surgically attacking a prostate without thorough cystoscopic study, not only because of the knowledge gained by the orifice picture, but also because other diseases, which so frequently simulate prostatism or are associated with it, can be definitely understood. For instance, bladder tumors occur in quite a percentage of cases along with prostatic obstruction, vesical calculi 16 per cent or more, diverticulæ of the bladder in 5 per cent and the ability to differentiate between diseases of the central nervous system and mechanical obstructions testify to the importance of thorough cystoscopic study.

The next and indeed the most important of all phases in the progress of prostatic surgery was the one of recognition of the importance of the effects of such obstructions upon the kidneys and may be termed the renal phase. The understanding of the gravity and seriousness of high residual urine and its back pressure effects upon the upper urinary tract and the institution of measures to correct its deleterious effects have done more to make prostatic surgery safe than any other factor.

With the appearance of renal functional tests such as tests of elimination, notably represented by the Phthalein test proposed by Geraghty and Roundtree, and the determination of the non-protein nitrogen, or the tests of retention, safe guards have been presented. You are all thoroughly familiar with the necessity for careful decompression of the full bladder, gradually lowering the intra-vesical and intra-renal pressure without sudden transformation, and never operating upon a patient until the tests which have been mentioned, as well as the patient's general condition, seem to indicate that renal function and the cardio-vascular system are in such conditions as to make surgery reasonably safe.

It is my policy to always prepare these patients, whether for a major operation or a minor one, by gradual decompression with catheter drainage. It is rare that an indwelling catheter is not tolerated and rarer still that it cannot be introduced. There is seldom an excuse for an immediate supra-pubic drainage as this in itself adds tremendously to mortality and seems to me to be the very thing that we should shun. With patience and care the catheter will prepare.

The next period in this development is one of conservative surgery instituted in 1908 by Young when he suggested his median bar incisor for bars and simple contractures of the vesical neck. By means of this operation about 15 per cent of the obstructive conditions at the internal orifice of the bladder could be cured and it was demonstrated as time went on that a sufficient amount of tissue could be removed to insure both an immediate and a lasting result.

Keenly appreciating the value of this type of surgery, but mindful of the fact that there were certain disadvantages such as the likelihood of hemorrhage and reaction from absorption from the raw surface, I constructed in 1919 a cautery punch

which was designed to minimize hemorrhage and absorption after the removal of such bars and contractures. After an experience of ten years, I feel safe in stating that such obligations have been fulfilled by means of the cautery attachment.

It was not long after I began to use this instrument that it became apparent that far more than 14 per cent of obstructive lesions were applicable to such surgery and I found myself gradually employing this technic in an increasing number and type of obstruction until at the present time I am using it in at least 40 per cent of all cases of prostatic obstruction.

Prostatic growths have been classified as inflammatory and neoplastic, benign and malignant, the inflammatory growths being represented by the contractures and bars and constituted about 14 per cent. The benign neoplasms considered chiefly as adenomas about 60 per cent to 65 per cent and carcinoma about 20 to 25 per cent. By means of the punch operation, removing portions of an otherwise enlarged gland and noting that the rest of the organ subsided materially, out of proportion to the amount of tissue removed and at the same time the histology of the specimen being identical with what has been classified as adenoma, I began to concentrate upon this feature of prostatic obstruction and have been gradually convinced that the majority of such benign growths are not neoplastic, but represent a gradual evolution of inflammatory processes over a long period of time.

In order to fortify this statement let me present more reasons: In the first place about 30 per cent of men beyond 50 are supposed to have prostatic enlargements. It would be unreasonable to expect that the prostate should be so frequently subjected to tumor growth, quite unlike any other gland or tissue in the body. On the other hand, the prostate is one of the most frequently infected organs in the human machine and one would naturally expect that an inflammation should be present in a large percentage of prostates as the precursor of an indolent, progressive, neglected inflammatory reaction.

Geraghty showed that hyperplasia was frequently observed near the urethra in the location most commonly subject to infection. During eighteen years of practice I have never seen a hypertrophy develop in a patient who had been treated for chronic prostatitis and this means several thousand individuals. This is in striking

contrast to the frequency of over-growth in the untreated prostate. I have seen over 100 cases in which there was definite prostatic hypertrophy 10 to 18 years ago in many instances with obstructive symptoms, few with retention, in patients who have been treated palliatively and who today, without surgery, have perfectly normal prostates without obstruction.

I have, in other papers, gone into the pathological changes of the prostate in support of the inflammatory nature, but will not take your time on this occasion to discuss it in detail, but shall simply remind you that the picture as a whole signifies a chronic inflammatory hyperplasia and not a neoplasm. I have seen numerous prostates which were large and the pathological specimens removed by the cautery punch show definite changes which have been designated as adenomas diminish to normal size with only a small part of the prostate removed, simply enough to relieve congestion, edema and inflammatory reaction from the spasm and tension of obstruction. This, therefore, seems to signify that by proper prophylactic regime, observing prostates in younger men and protecting them from insidious infection, there is a great possibility of diminishing the surgical treatment in later life to an astounding degree. This may be called, therefore, "The Age of Prostatic Prophylaxis." My chief message to you, therefore, as practitioners of medicine, is to incorporate in a routine physical examination not only the palpation of the prostate, but the expression of its secretion with thorough microscopic study, and if infection be present, I urge you to treat these early lesions by massage and other methods which are in current usage for such inflammations.

In previous communications I have analyzed all of the cases on which the cautery punch operation has been done and have shown that the symptoms, such as frequency, urgency, incontinence, uremia, etc., are identical to those occurring in the gross obstructions. Residual urine has been the same ranging from one ounce to 1500 c.c., the prostate has shown enlargement in 50 per cent of all cases. The prevalence of retention and catheter life has been identical with the gross obstructions and hence offer no clinical differential value.

The interpretation of the type of prostate which is suitable for the cautery punch operation is dependent entirely upon re-

peated cystoscopic study of the vesical orifice under drainage as well as the transformation of the size of the rectal prostate. If under catheter drainage and splinting of the orifice, hot applications and antiseptics, the prostate begins to diminish in size, and if the cystoscopic appearance is not too gross, that is, there is not large, round intra-vesical lobes with deep clefts, and if the intra-vesical growth shows recession, there is a great possibility that the punch operation can be utilized very frequently.

I cannot urge too strongly repeated studies of the vesical orifice by means of the cystoscope and repeated investigations of the prostate during drainage. Under this regime many of the prostates which appear at first to be unsuitable for minor surgery will be found to diminish to such a size as to place them in such a category.

I have employed this operation 450 times and have repeatedly reported critical analyses of the cases. It has been definitely shown that the operation is effective in removing sufficient tissue to relieve obstruction in at least 85 per cent of all the cases in which it has been employed. There is no question that it is applicable to the smaller obstructions. This is accepted and it should certainly supplant any major surgical procedure for such growths.

I wish to devote the remaining time today in directing your attention to the use of this operation in the larger obstructions and in stressing this phase I felt that an analysis of the recent cases on which there is not only a definite statistical study, but a freshness of memory as well, may be more effective. For this reason I shall discuss the 75 operations which have been performed on 43 patients during the last year.

- 2 patients each had 5 operations.
- 4 patients each had 4 operations.
- 3 patients each had 3 operations.
- 6 patients each had 2 operations.
- 28 patients each had 1 operation.

That is, 15, or 35 per cent of the 43 patients had 2 or more operations with total of 45 operations on the 15 patients, an average of 3. There were 28 patients who had single operations; some of these were single incisions of the orifice and others had 2 or 3 punches at one sitting.

Analysis of the type of prostate in these 43 cases, showed it to be small in 6, large in 17, moderately enlarged in 20, or 37 of the 43 patients had definite rectal enlarge-

ment. Cystoscopic appearance of the orifice showed 13 small collar obstructions, 16 large collar obstructions, 10 lateral lobes and 4 contracted necks.

The 2 patients with 5 operations: one was entirely cured, an old man with a rather large type of obstruction associated with vesical calculus which was removed under local anesthesia by litholopaxy. This patient was on catheter life and after 4 operations with removal of 10 pieces from his orifice was unable to void a drop of urine. The 5th operation with removal of 2 lobules gave him complete restoration of urinary function. The second patient was a gross obstruction in a very old man with marked uremia. In a younger subject in good condition it would have been foolish to have tried anything but a prostatectomy. His condition did not warrant it and after 5 punches there was no improvement. He later came to prostatectomy after a protracted drainage and stood it nicely.

The 4 cases with 4 operations were as follows: First patient had very high residual urine, uremia, Parkinson's disease. After 4 operations he is now able to empty his bladder and has a perfectly excellent functional result. Another patient, man aged 84, was apparently a prostatectomy type, had 2 diverticulae of the bladder and vesical calculi. The old gentleman was a very bad risk and after litholopaxy and the 4 operations he is entirely comfortable, empties his bladder completely and does not have to use a catheter. A major surgical operation would have been a great hazard to this man. The other 2 patients had carcinoma, one is greatly improved, but not entirely well, the other is not improved at all. We have been unable to remove sufficient obstruction along with radium and deep X-ray therapy to secure a satisfactory result.

Three patients with 3 operations, one very interesting case had 12 oz. of residual, large moderate intra-vesical obstruction and rectal prostate, no benefit after the first 2 operations, complete cure after the 3rd. Case No. 2, complete retention, 81 years old, completely cured after the 3rd operation, patient empties his bladder completely. Case No. 3, middle aged man, marked diabetes, 1200 c.c. of residual urine, extremely bad condition, at first, prostate felt only suitable for major surgery, patient's condition would not warrant it, had complete relief of obstruction after 3rd punch operation.

Six patients with 2 operations: one had supra-pubic cystotomy in another city primary to enucleation of the prostate. He evidently had a great deal of trouble following the operation and came to me for the punch. He was completely cured of his urinary obstruction, fistula promptly closed. Case No. 2, large prostate, high residual, partial catheter life, man aged 60, big right lateral lobule, 2 operations, removal of 6 pieces, complete relief. Case No. 3, small prostate, right lateral lobule, 4 pieces removed in 2 operations, cured. Cases Nos. 4 and 5, both cancer, case No. 4 on catheter life which was extremely painful, relieved and urinary function established after removal of 5 pieces. Case No. 5, marked urinary distress with pain, residual urine, relieved after removal of 3 pieces. Case No. 6, no improvement after 2 operations, removal of 4 pieces, prostatectomy later.

In analyzing these cases of large obstructions it is noticed that many were extremely bad risks and a major surgical operation would have been creative of a high mortality rate. With these there was no mortality and 84 per cent were restored to urinary comfort.

In comparing these to the ones who had single operations we note the following: on the 28 patients, 20 of the 28 showed complete and perfect results, or 75 per cent, 3 fair results, or 11 per cent, or 86 per cent either completely relieved or made comfortable, 14 per cent were unimproved, none made worse.

Of the four poor results, 2 occurred in contractures of the neck, the type of case for which this operation was originally designed, but in which the results are strikingly poor, but this is equally so in major surgery.

Two of the cases of carcinoma recurred about as fast as the obstruction was relieved, although as a rule the punch operation has the most admirable effect in relieving the obstruction in carcinoma of the prostate along with radium and deep X-ray therapy. Some of the most pleasing results have occurred in carcinoma.

In this series of 43 cases 9 have been carcinoma or 21 per cent. In every case of carcinoma which has been operated upon by the punch the specimen removed has demonstrated carcinoma in the tissue hence its importance in some questionable cases as a diagnostic means.

Poor results, all but one, occurred in small prostates. In the fair results I have classified the ones who have received great benefit but were not entirely relieved. Two of these patients were advised to have another operation, but they have not done so.

In this group of 28 cases 3 were large prostates, rectal and intra-vesical, 11 small and 14 moderate. The striking thing is that the 3 large prostates were entirely cured by 1 operation after the removal of several pieces of tissue from the orifice. They showed an astounding diminution in size. Of the 14 moderate enlargement there were 11 cures, 2 improved, 1 showed no improvement.

Of the 43 cases, 12 were on catheter life or had complete retention of urine, 1 had supra-pubic fistula, all had residual urine and all gave pronounced evidence of prostatism.

One of these patients, a young man from whom I had removed a kidney 8 years ago, came in complaining of severe urinary symptoms and was believed to be suffering with a remnant of vesical tuberculosis. No evidence of tuberculosis in the bladder except that there was contracture of the neck and regurgitation up the remaining ureter to the kidney. This patient was completely cured by the removal of a section of this contracture.

It is very pleasing in analyzing these cases to note the benefit derived from such an operation on the old men suffering with many complications on whom a prostatectomy would have undoubtedly resulted in an extremely high mortality. This has been noted in an analysis of the previous cases.

It is, therefore, evident that this operation has an increasing sphere of usefulness in the larger obstructions, particularly in the bad risks, but it requires time and patience, one must not become discouraged if there is no benefit from 1 or 2 operations because some of the best results have occurred after the 3rd or 4th attempt.

In this series of 43 cases, 3 of them came later to prostatectomy or a little over 6 per cent. In the previous cases only 3.4 per cent came to prostatectomy.

*Technic.* Technic of the operation is simple and yet it requires a thorough familiarity with the endoscopic appearance of the urethral orifice. The operation is entirely a visual one and obstruction can be definitely seen at any part of the orifice;

the instrument may be rotated at different segments and locate lobules which have been previously determined by cystoscopic study. The visualization of the orifice is perfect and in the hands of trained men it seems to me impossible that one should have any difficulty in knowing the exact nature of the tissue secured in the slot of the instrument.

It is perfectly true that in untrained hands difficulty may be experienced, but this is true with any type of surgery.

The instrument is passed into the bladder after cocaineization of the urethra, bladder contents evacuated, and, for the median incision, which is the most frequent one, the instrument is pulled outwardly and elevated at its distal end so as to grasp the obstruction in its slot, the obturator having been previously removed.

With the obstruction in the slot of the instrument the field is dried by suction syringe and the obstruction is visualized by reflection light. It is perfectly easy to differentiate between vesical mucous membrane and the internal orifice of the bladder. With the orifice in the slot, the instrument is pressed downward with the little finger of the left hand, upward with the thumb and pulled outward, the vesical orifice is squeezed forcibly into the instrument. Under vision the orifice is then infiltrated with 1 per cent novocaine through the special syringe.

Following this it will be noted in most instances that the orifice relaxes and more tissue may be compressed into the slot. The field is thoroughly dried again by suction and cotton pledgets, neck inspected, then the cautery blade is inserted into the sheath until it meets the obstruction. The amount of heat has previously been tested, the operator then asks for the current to be applied, waits until the frying sound is heard. It is then evident that the heat has reached the blade. If the blade is pushed home before this there is danger of breaking it. This is a very important point and has been responsible for the breaking of many blades in the hands of those who were a little hasty in the cutting of the orifice. When the current is properly applied the operator, with his right hand, pushes the cautery attachment home by a gentle rotary motion, this takes about 4 seconds. In case of excision of one single segment of the orifice the operation is over. If one desires to remove one or more bits, the instrument is pushed inwardly into the bladder and the current lightly applied to co-

agulate the tissue within the blade. In this way it may become adherent to it as to allow its removal. When it is removed from the sheath the tissue is extracted from the blade and the blade cleaned for another burning. The operator in the meantime engages the orifice and rotates the slot of the instrument to a desired location and notices the lobule fall into it. This is perfectly plain when the obstruction is within the grasp of the instrument. The same process is repeated as has been given above. I have removed as high as 5 pieces from the orifice at one sitting. The operation is usually painless as far as the burning is concerned.

In the removal of pieces from the upper or lateral sphincter margin it is sometimes quite unpleasant to the patient on account of the position of the instrument and the tension on the triangular ligament.

The blade of the instrument requires very careful attention, but, with proper care, it is very durable. I have the original blade of my instrument which has been in use for 9 years and it has been repaired but once, and that simply for tightening a set screw. Some operators have complained that the blade is delicate and that they have experienced trouble with the current. For this reason I have had constructed a high frequency cautery blade which is very substantial and does not require the delicate attention necessary for the cautery blade. It can be used with the ordinary high frequency apparatus. It works very satisfactorily and it has the advantage that the operator is able to manipulate the current himself and is not dependent upon an assistant. The burning is rapid and effective and as far as I have been able to determine, the removal of the obstruction is about the same as with the simple cautery instrument. There has been no hemorrhage with its usage.

I wish to present also a child's punch, a miniature of the cautery apparatus. This instrument is designed for the congenital obstruction so frequently seen at the internal orifice of the bladder in babies and young children. These obstructive conditions are responsible for so many destructive effects upon the kidneys and creative of a very high mortality rate if left untreated, and, under ordinary conditions are surgically handled by supra-pubic operation with resection of the internal vesical orifice. Proportionately this instrument is capable of removal of as much tissue as the large one extracts from the

adult orifice and I believe will be capable of correcting such defects in a large percentage of cases and should supplant open surgery to a great extent thereby contributing to a better mortality rate.

At the completion of the operation which usually takes but a very short time after one has gained experience, a large indwelling catheter is inserted, fixed and bladder irrigated to be sure that it is in proper position, some fluid allowed to remain in bladder and the catheter is corked. Patient is put to bed, the cork is removed and continuous drainage instituted. It is important to have a large catheter, at least a No. 24 French, with 2 eyes. In this way free drainage is given and clots are prevented.

There has never been any trouble with bleeding or any real discomfort in the post-operative course unless clots occluded the catheter. This is the very important point in the post-operative care. For several hours these catheters are watched very carefully, a receptacle of sterile solution and an aspiration syringe are kept at the bedside. If there is any impediment in the drainage it is promptly taken care of. The care of the first few hours is most important. If the drainage promptly clears and in many cases there is absolutely no staining, the catheter is corked and patient allowed to remove the cork at intervals. Daily injection of argyrol or mercurochrome is given in order to keep the bladder and the orifice clean and to hasten healing. The duration of catheter drainage depends upon the type of obstruction and the associated conditions such as residual urine, toxemia and the like. In simple cases it is removed in 48 hours. In cases with high residual urines and in large obstructions where a secondary operation is believed necessary it is allowed to remain for at least a week before testing the effects of the operation. If urination is imperfect it is reinserted until the function is found satisfactory after its removal. These patients require very little sedative, the majority do not require a single hypodermic.

*Complications.* Complications have been rare.

*Hemorrhage.* The superficial burning has served to minimize hemorrhage. All patients have slight staining of the urine. There have been but a very few individuals who have caused any concern regarding hemorrhage. There were but ten patients of the 450 operations who have attracted attention from hemorrhage. If the catheter

ter is large and the eyes are free and care is given the first few hours one should expect very little trouble with bleeding. Our experience has been that one small clot occluding the eye of the catheter creating spasm of the bladder is the important factor in the causation of bleeding. It is important to see that the catheter is thoroughly fixed and that it does not have to be manipulated or reinserted. There has never been a hemorrhage sufficiently severe to require supra-pubic cystostomy. There have only been 5 instances in which evacuation of the clots with the Bigelow evacuator was found necessary.

*Chills and Fever* have occurred very rarely. In all there have been but 20 patients of the 450 who had reactions following the operation and practically all of these reactions occurred in patients who had been previously suffering with pyelonephritis. They all subsided promptly under palliative treatment and in only one instance was drainage necessary.

*Epididymitis* has followed its usual tendency to make postoperative course of urinary surgery unpleasant. It, however, has occurred less frequently than following the use of the indwelling catheter for prostatic drainage. Hence, there is nothing specific about this operation in the promotion of epididymitis.

Pronounced *sloughing* has never occurred following the operation, nor have I ever seen incrustation of the orifice. The burning is superficial if done properly and should have no tendency to cause extensive reaction. Sections removed allow thorough microscopic study.

I have been asked many times if incontinence of urine had ever occurred following the operation. I have never seen incontinence and one should not expect it. We do not hesitate in prostatectomy to remove the prostatic urethra and insult the sphincter to an extreme degree, hence it should not be anticipated following a much more simple operation.

There has never been the slightest disturbance of the sexual apparatus.

I have never seen a stricture of the urethra develop following the operation. This could only occur in instances where the current had not been disconnected and unnecessary injury done to the urethra itself.

The operation has been very valuable in hastening the closure of indolent supra-pubic fistulae and has been used for the

removal of obstruction in 5 cases on whom supra-pubic cystotomy had been done as the first stage operation but the obstruction had not been removed for one reason or another, usually some serious complication. In all of these cases information was obtained from the surgeon who had done the operation that the prostate was large and that enucleation was thought necessary. But when they came under my observation the obstruction had shrunk to such a degree that the *punch* operation was entirely effective in not only closing the fistula but in curing the obstruction.

*Carcinoma of the Prostate.* I have used this operation in 36 cases of carcinoma of the prostate with some very gratifying results. In quite a number of inoperable carcinomas with metastases who were suffering with extreme bladder discomforts the *punch* operation has given complete restoration of urinary comfort with durability of two and one-half years in several instances. A number of these patients have had recurrence of obstruction and have required repeated operations to keep them comfortable. Three of the patients have not been relieved, usually because of the size of the obstruction and its rapid recurrence. At any rate, the operation offers the most pleasant method of handling the obstruction in the advanced carcinoma and is certainly to be recommended instead of supra-pubic drainage.

Totaling the results obtained by this operation in all the types of obstruction in which it has been employed over a period of 9 years, and it is found that 85 per cent have perfectly satisfactory results with this operation. It is a type of surgery which is not simply a mere cutting of the orifice which requires but a few minutes, but requires a great deal of attention and pains and knowledge of conditions. Many, whose results were apparently imperfect, have been completely cured by repeated operations. It is this familiarity of the orifice and the belief in the adaptability of the operation which in many instances insures a favorable outcome.

Often times the operation requires more time than prostatectomy. That is in cases where several operations are necessary for larger obstructions, but these are chiefly for bad surgical risks and usually done to protect against a mortality. There has never been a death in the 450 operations due to the operation. About a year ago a patient died on the eighth post-operative day, after a simple median bar excision.

The patient obtained a complete relief, was feeling perfectly, had not had the slightest trouble from the operation. He fell dead of an old myocardial condition which had caused him many previous serious attacks. His death had absolutely nothing to do with the operation.

As a rule it saves the patients economically since the majority of patients are confined to the hospital only about a week and many attend to their business affairs in a short time after the operation.

In summarizing allow me to suggest that the profession pay strict attention to the prostates of middle life and protect them from insidious infections. In so doing the majority of individuals may be spared any type of surgery and if early obstruction becomes manifest they should be dealt with promptly and not allowed to progress.

My results indicate that the operation can cure 85 per cent of obstructions to which it is applied.

The operation is simple of technic, perfectly visual, but requires proper interpretation of the orifice picture and patience in the execution of the after care. It necessitates diligent observation and attention after operation but offers very little hazard to patients upon whom it is properly performed.

Complications are few and mortality is negligible.

#### COMMENDABLE RESEARCH

The growing activities of commercial firms in chemo-therapeutic research, in collaboration with universities and clinics, has led to much favorable comment on the part of the medical profession. Never has there been a time in the history of medicine when such important research developments have taken place, and are now under way.

As an example of what can be accomplished, the ABBOTT LABORATORIES, North Chicago, Ill., has, during the past ten years, taken a place in the front ranks of pharmaceutical manufacturers through its successful work. It is understood that this firm, together with its subsidiary, the Dermatological Research Laboratories of Philadelphia, expended over \$100,000 in research work in the year 1927. New and important discoveries for the use of the medical profession have resulted from these scientific investigations and other work is in progress.

A new scholarship for chemo-therapeutic research at Northwestern Medical School of Chicago, has just been announced by Dr. Alfred S. Burdick, President of the Abbott Laboratories.

#### UREA AND CREATININE CONTENTS OF BLOOD IN RENAL DISEASE

The investigation of the relationships between the urea and creatinine contents of blood was

made by F. S. Patch and I. M. Rabinowitch, Montreal (Journal A. M. A. April 7, 1928), because of a number of apparent anomalies which had been encountered and which could not be explained on the basis of technical errors. A large series of observations led to the findings of cases in which the general relationships between the urea and creatinine concentrations of blood were absent. In these cases, high urea values were found associated with normal or nearly normal creatinine values. This led to a special investigation of these cases. It was found that, in spite of high urea values, symptoms of uremia were usually absent when the creatinine values were normal or nearly normal. It was also found that though high creatinine values and symptoms of uremia were accompanied by positive diazo color reactions, this was not necessarily so with high urea values. Since the different creatinine values could not be explained wholly on the basis of different rates of creatinine excretion, it was suggested that the greater part of what is regarded as creatinine is probably not creatinine. Chemical studies of some specimens of blood supported this view. The clinical value of these observations, from the point of view of the chemical reactions of the blood, lies in their showing that urea studies unaccompanied by observations on "creatinine" and the diazo color reaction should not be relied on in estimating progress or prognosis.

#### CASE OF INTRASPINAL EXTRADURAL ABSCESS

Neil S. MacDonald, Minneapolis (Journal A. M. A., April 7, 1928), reports the case of a boy, aged 2 years, who, three weeks previously, had had an acute respiratory infection causing an otitis media which ruptured spontaneously and was discharging at the time of the examination. The patient presented a picture of profound septicemia, manifested by the usual accompaniments, such as loss of weight, fluctuating temperature, rapid pulse, sleeplessness and marked discomfort. The following physical signs were obvious: rigidity of the back, thigh and leg muscles, with flexion of the lower limbs and an apparent beginning bilateral foot drop, which was in reality a spastic paraplegia. The patellar reflexes were exaggerated. There was also a deeply palpable inflammatory induration in the dorsolumbar region. A tentative diagnosis of intraspinal pressure, the result of an infectious process, was made and a laminectomy recommended which was performed the following day. The operation disclosed a circumscribed extradural abscess in the dorsolumbar region, a portion of which had escaped through the interlaminar spaces into the adjacent soft parts on the left side underneath the lumbar muscles. Liberal tube drainage was provided, and immediate improvement in the general physical condition was obtained. The wound drained freely for a period of approximately two months, and eventually closed. The laboratory reported that the infection was due to a staphylococcus of undetermined type. A smear from the ear was not made. The postoperative diagnosis was localized spinal abscess, extradural, the result of meningal or osteomyelitic infection, probably secondary to an acute infection process in the middle ear. A follow-up report eleven years later showed that the boy was well and strong, was big for his age, and was apparently in no way handicapped by his experience.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol. XXI NOVEMBER, 1928 No. 11

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

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### EDITORIAL

#### SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS\*

The writer notes that in spite of the discovery and use of sera vaccines and chemotherapeutic substances, claimed or intimated as cures of pulmonary tuberculosis, rest still remains the most valuable remedy in the treatment of this disease as well as of tuberculosis of the larynx and joints, and that it is common observation that bed rest only converts many progressive febrile cases of pulmonary tuberculosis into retrogressive afebrile forms. Assuming from this that rest is the most important factor in the hygienic dietetic and physical measures forming the basis of sanatorium

treatment; how may such rest be obtained? He answers his question by offering four different and progressive measures, any one of which when used must be known to be exactly indicated in the given case. It has been more than 30 years since the late John B. Murphy, at Denver, proposed artificial pneumothorax. Strange to say this was not widely adopted for many years after that. This first and simplest measure in the surgical treatment of pulmonary tuberculosis is, as a rule, never adopted nor indicated unless the lesion is confined to one lung, and there is a fairly active healthy contralateral lung with at least no active lesions present. In a rather large series of cases it was not observed that artificial pneumothorax activated the disease in the opposite lung. Artificial pneumothorax fails in a certain percent of cases on account of pleuritic adhesions in which event attempt must be made to divide the adhesions by galvanocauterization through the thoroscope. This procedure may be easily accomplished, very difficult of accomplishment or impossible; and in the latter case resort is had to phrenicotomy or exairesis. Phrenicotomy has not been found very satisfactory due to the fact that the phrenic nerve has sharp variations in its origin, therefore exairesis or a rolling out of 8 to 10 cm. of the nerve is resorted to. There are certain dangers to this procedure and they arise from the fact that there are anomalies in the distribution and structure of the nerve itself and its close intimacy to the subclavian vein, laceration of which might lead to severe, if not fatal bleeding. A few such cases have been reported. In one instance the wall of the vein being torn, a fatal air embolism took place. The object of resection of the phrenic nerve is to paralyze the diaphragm thus permitting intra-abdominal pressure to force it upward resulting in lung collapse. If satisfactory collapse cannot be obtained by the above measure the surgeon is justified in considering thoracoplasty, which, while a rather shocking operation has undoubtedly been followed by brilliant results. It may be performed and preferably so, under local and regional anesthesia with the use of gas oxygen in certain cases. A preliminary phrenicotomy is performed in every case where thoracoplasty is undertaken. The operation is never done except in two or more stages, only a part of the ribs being removed at each time, the amount of rib being removed depending entirely on the amount of pathology in the lung in-

volved. Too long a time should not elapse between the stages of thoracoplasty.

Thoracoplasty is not to be used except after patient attempts at the methods above enumerated. Dissemination of the disease or its activation is not a frequent or dangerous complication in pneumothorax, but it is common and dangerous after thoracoplasty.

Admittedly these forms of surgical treatment of pulmonary tuberculosis must be carefully worked out and determined upon after close and joint study of the individual case by the skilled internist and surgeon. We have very little to offer today in the treatment of tuberculosis except rest, and if after careful bed rest and adjunct care pulmonary tuberculosis does not improve, then an attempt to place the lung at rest by artificial means should be seriously considered.

\*Matson—Transactions of the College of Physician. Volume 29, Philadelphia, 1927.

### *Editorial Notes — Personal and General*

DR. W. C. VERNON, Okmulgee, visited in Colorado recently.

PATTERSON HOSPITAL, Duncan, was opened to the public in October.

WEWOKA HOSPITAL, recently completed by Dr. Guy B. Van Sandt, has been formally opened to the public.

DR. and MRS. S. DePORTE, formerly of Ardmore, now residing in Oklahoma City, announce the birth of a son, November 1, 1928.

DR. A. M. McMAHON, Duncan, returned November 3 d, from St. Louis, where he had been taking graduate work in eye, ear, nose and throat work.

DRS. E. S. FERGUSON and D. D. McHENRY attended the American Academy of Ophthalmology and Otolaryngology at St. Louis, Mo., from October 16th to 20th.

DR. JOHN F. PARK, who has been located at Tulsa for sometime, announces his early removal to McAlester, where he was formerly located. In the meantime Dr. Park is attending the New Orleans clinics.

OKMULGEE - OKFUSKEE Medical Societies met at Henryetta November 12th. Dr. Carroll C. Pounders, Oklahoma City, guest of honor, delivered a talk on "Pediatrics," illustrated by lantern slides. Dr. T. G. Wails, Oklahoma City, was present and read a paper.

STEPHENS COUNTY MEDICAL SOCIETY, at their October meeting were guests of Drs. J. B. Carmichael and J. P. Bartley of Duncan. Dr. C. J. Fishman, Oklahoma City, delivered an address on "The Evolution of Symptoms in Gastro-intestinal Diseases or Digestive Disturbances."

LINCOLN COUNTY MEDICAL SOCIETY met in regular session with the doctors of Prague, October 4th. They were served with a banquet by the ladies of the M. E. Church. Dr. Mraz, Oklahoma City, gave a talk on Prostatic Enlargement. Dr. J. E. Hughes, Shawnee, talked on the general practitioner's field.

DR. EARL D. McBRIDE, Oklahoma City, attended the American College of Surgeons in Boston, October 8th to 12th, and will visit several of the larger hospitals and clinics in Boston and New York, returning home the latter part of the month. Mrs. McBride accompanied him.

THE UNIVERSITY OF OKLAHOMA has just opened a complete, modern, new infirmary for the use of the University students. Completion of this splendid structure is due to the Dad's Association, which has long noted the inadequacy of the old structure. Drs. Gayfree Ellison and Ruth Reichman will be physicians to the institution.

THE AMERICAN ASSOCIATION of Railway Physicians met in Chicago October 31, November 2, 1928. Dr. Fred S. Clinton, Tulsa, the President, delivered an address, "The Railway Surgeon as a Practical Pioneer of Industry or Traumatic Surgery." Dr. H. T. Ballantine, Muskogee, read a paper on "Traumatic Surgery Complicated by Diabetes." Dr. Willis K. West, Oklahoma City, read a paper on "Fractures of the Face."

DR. L. CHESTER McHENRY is now associated with his father, Dr. D. D. McHenry, Oklahoma City, in the practice of the eye, ear, nose and throat. Dr. McHenry graduated from Harvard in 1925. After taking a two-year internship he has divided his time between a post-graduate course in the University of Pennsylvania, and as assistant to Dr. Chevalier Jackson of Philadelphia, specializing in bronchoscopy and esophagoscopy.

CARTER COUNTY MEDICAL SOCIETY met in Ardmore, October 9th. Dr. E. P. von Keller read a paper on "Physiotherapy in Modern Medicine." The society adopted resolutions of regret upon the removal of Dr. S. DePorte to Oklahoma City, the resolution commending Dr. DePorte to his new associates. Dr. DePorte had been secretary of the Carter County Medical Society for six years. Dr. G. E. Johnson, Ardmore, has been appointed as his successor.

The following Oklahoma physicians spent two weeks, October-November, at Fort Sam Houston, taking the Commanding Officers' Training course: Paul Brown, Tulsa; Ralph V. Smith, Tulsa; W. F. McAnally, Tulsa; John F. Park, McAlester; L. C. Kurykendall, McAlester; Chas. H. McBurney, Clinton; D. W. Griffin, Norman; C. A. Thompson, Muskogee. Altogether 19 officers were in this class, and it was the unanimous opinion of those attending that this was the most beneficial course and instructions received since their participation in Medical Reserve Corps work.

THE UNIVERSITY OF OKLAHOMA dedicated its new School of Medicine building and the Crippled Children's Hospital November 2nd, at Oklahoma City. The principal speaker of the occasion was Dr. Jabez N. Jackson, formerly president of the American Medical Association. The principal speaker of the afternoon, at which time the Crippled Children's Hospital was dedicated, was Governor Johnston. The day before the dedica-

tion exercises were held, being devoted to the annual clinical meeting of the medical school alumni.

### DOCTOR W. D. FAUST

Dr. W. D. Faust, Ada, aged 63, died Saturday, October 20th, at his home. Death was due to hemorrhages of the stomach. Funeral services were held October 21 from the family residence, the Dr. C. C. Moir, minister in charge. Interment was at Rose-dale cemetery with the honors of the Masonic fraternity, the Blue lodge being in charge, and the Commandery acting as escort.

Dr. Faust was born June 10th, 1865, at Heartsville, Tenn. He received his M. D. degree from Vanderbilt University in 1891. He practiced at Hillsdale, Tenn., until 1903, when he moved to Ada, Oklahoma.

Dr. Faust served as president of the Pontotoc County Medical Society several times.

Dr. Faust is survived by his widow and three daughters, all of whom reside in Ada.

### TULSA ACADEMY OF MEDICINE CLINICS

The Clinics of the Tulsa Academy of Medicine were held at the St. John's Hospital on Wednesday, November 21st. Luncheon being served at that institution. The guest of honor was Dr. Dinsmore of the Crile Clinics, who held dry clinics on diseases of the thyroid, at the hospital, and addressed the Academy at eight o'clock in the evening. Dinner was served at the Hotel Mayo. Following is the program:

#### Surgical

Dr. C. C. Hoke—(1) Thyroidectomy, one case.  
Dr. D. L. Garrett—(1) Peri-urethral cyst and Perineorrhaphy. (2) Two laparotomies. (3) One appendectomy.

Dr. Fred A. Glass—(1) Thyroidectomy. (2) One other case.

Dr. P. N. Charbonnet—(1) One hysterectomy.

Dr. Fred Y. Cronk—Two laparotomies.

Dr. A. Ray Wiley—Two laparotomies.

Dr. V. K. Allen—Two rectal cases.

#### Orthopedics

Dr. Wade Sisler—Open operations on joints and demonstration of orthopedic apparatus.

#### Urology

Dr. H. S. Browne—Cystoscopic examination and treatment, pyelitis.

Dr. Malcom McKeller—One or two cases for cystoscopy.

#### Obstetrics

Dr. George Osborne—Demonstration of technique in Cesarean section and Podalic version.

#### Medical

Dr. Dinsmore—Dry clinic on diseases of the thyroid.

Drs. Goodman and Shepard—Demonstration of medical cases particularly of diabetics.

Dr. D. O. Smith—(1) Primary Carcinoma of the lung. (2) One case of Banti's Disease.

Dr. E. K. Witcher—Ketonic diet in Epilepsy.

Dr. Wm. J. Trainor—Heart clinic—Electro-Cardiography.

Dr. Jeff Billington—One case.

Drs. Larrabee and Charbonnet—Demonstration of plates, showing visualization of Fallopian tubes by injection of iodized oil.

#### Diseases of the Eye

Dr. Walter A. Huber—(1) Excision of juvenile cataract. (2) Strabismus operation.

Dr. Chas. Haralson—(1) Strabismus.

#### Pediatrics

Drs. C. E. Bradley and K. C. Reese—One hour clinic.

#### Ear, Nose and Throat

Dr. R. N. Smith—One or two cases.

Dr. J. C. Braswell—One or two cases.

#### Pathology

Dr. Nelson—Demonstration of interesting pathological specimens and slides of tissues removed at operations and autopsies.

#### Dermatology

Dr. W. A. Showman—Ringworm of the hands and feet; demonstration of cultures and microscopical diagnosis.

Dr. Chas Woods—Cases illustrating results obtained in radium treatment of Epitheliomas of the skin.

Dr. Jas. Stevenson—Cases for diagnosis.

### EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.  
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The Curative Value of Aspiration of the Vitreous.  
Zur Nedden: Arch. Ophth., 1928, lviii, 109.

Zur Nedden advocates aspiration of the vitreous in cases of hemorrhage into the vitreous, iridocyclitis, glaucoma, optic atrophy, and ectogenous infection. After the careful introduction of a lancet-needle cannulae he removes 0.2 c. cm. of fluid from the center of the vitreous, which is always more fluid than the periphery.

The good results which Zur Nedden has obtained depended upon the removal of the opacity and resorption following aspiration. His experiments on animals and observations on humans have led him to believe that lost vitreous is speedily and spontaneously replaced almost as quickly as in the case of aqueous. Substitution of saline solution is contra-indicated because it delays the natural healing process and irritation as well as infection may follow.

Recent Clinical Observations on Involvement of the Blood Stream in Otitic Disease. Lillie, H. I.: Ann. Otol., Rhinol and Laryngol., 1928, xxxvii, 388.

Phlebitis of the sigmoid sinus must not be confused with mural obliterating or degenerating thrombosis. By phlebitis is meant inflammation of the wall of the vessel before mural thrombosis has taken place.

Lillie says that infection may extend from the temporal bone to the venous sinuses in several different ways: (1) by direct absorption of the in-

fection through the small vessels in the diseased mastoid, sometimes without visible changes in the appearance of the sinus wall; (2) by the development of phlebitis of the sinus, without parasinus abscess, by continuity from the infected bone of the sinus groove; (3) by direct extension into the sinus because of the breaking down of the wall of the sinus by a parasinus abscess; (4) by the breaking down of the intima of the sinus by the disease process and onset of mural thrombosis; and (5) by the breaking down of an obliterating thrombosis within the sinus.

The first two methods of extension are obviously encountered in the earlier cases and are characteristic of the types to be considered by the author. In the first and second types of the disease removal of the primary source of infection by a complete mastoid operation without interference with the venous sinus or jugular vein usually offers sufficient chance for control of the disease, so that it may be chosen as a well-directed conservative measure, particularly when the patient is otherwise in good or fair general condition. If subsequent surgical measures become necessary the delay occasioned by conservative treatment will not have materially increased the operative risk.

From time to time it has been observed that immediately after the removal of packing from the wound of the mastoid in certain cases in which the sigmoid sinus had been exposed at operation there may be a sudden high rise in temperature, with or without a chill, followed by an uninterrupted convalescence if there was no further surgical interference. Such a course of events could be explained by the absorption of infected material or the products of infection into the sinus, as the removal of packing might disturb a natural protective barrier. In certain cases in which the mastoid dressing had not been changed early enough a sudden high rise in temperature might be relieved by removing the packing and flushing the wound. In cases in which parasinus abscess was encountered and a natural protective barrier had been established there was rarely any febrile reaction after operation. If symptoms and signs of involvement of the sinus were present before mastoid operation, but no objective sign of involvement of the wall of the sinus could be made out at the time of the operation, non-interference with the sinus itself was followed by uninterrupted convalescence. This could be explained on the basis of removal of the primary focus of infection before damage to the wall of the sinus had taken place.

These observations support the hypothesis that absorption takes place in the early cases directly into the blood stream through the vasa vasorum into the sinus. Because of the fact that the cranial sinuses are but sparsely covered with lymphatics it is therefore not very probable that absorption takes place through such a channel. In certain cases of parasinus abscess in which a natural barrier had been established, absorption was prevented. In fact the presence of visible changes over the surface of the sinus furnished no proof that the wall of the vessel was involved throughout its entire thickness.

The author therefore assumed that in certain early cases, even those in which septicaemia could be demonstrated by blood culture, the disease might be controlled by the institution of suitable methods so that further surgical interference would be unnecessary. To this end the diseased bone was removed by a complete mastoid operation, the wall of the sinus was uncovered until

normal-appearing dura was encountered, and the dura was not forced away from the edges of the bone by packing the wound, but instead allowed to tampon against the edge of the bone under intracranial pressure and thus afford mechanical obstruction to involvement. Recent experience with such cases in the early stage of the disease has justified this procedure.

During the past year Lillie observed five cases of acute suppurative otitis media and mastoiditis in which signs and symptoms of invasion of the blood stream suddenly appeared during the course of an otherwise satisfactory convalescence. At no time before the marked change in the course of the disease had there appeared any of the usual positive symptoms or signs of surgical mastoiditis. All but one case had been observed from the onset of the otitis media.

Studies in Otitic Sepsis., Kopetzky, S. J.: *Ann. Otol., Rhinol. and Laryngol.*, 1928 xxxvii, 329.

A detailed study of twelve cases of otitic sepsis is reported by Kopetzky and the outstanding features of each are summarized. No attempt was made by the author to select unusual cases for this study.

In the first case reported the important factor is the presence of diabetes. Since mastoiditis in a diabetic is almost painless and a symptomatic, operative intervention is indicated earlier than in the usual case of acute mastoiditis. Headaches which are due to the mastoid lesion should disappear soon after operation, but if they persist or return after the mastoid operation, the presence of a sinus phlebitis should be strongly suspected. The headache due to sinus phlebitis is almost always localized on the affected side.

The temperature reaction in these cases is more important than the presence or absence of chills. Only when the sinus phlebitis threatens general systemic invasion is a chill present. All but three of the cases reported by the author showed a septic temperature. The absence of a septic temperature or the presence of only a slight elevation in temperature does not necessarily exclude the diagnosis of sinus phlebitis.

The otoscopic picture before operation gives no information as to the presence or absence of a sinus phlebitis. Signs that appear later in the course of an otitic sepsis are an enlarged spleen, papilloedema, petechial hemorrhages, and a metastatic lesion.

In acute hemorrhagic mastoiditis no information can be gained by inspection of the sinus wall or plate, since the interior of the sinus becomes infected by the extension of thrombi in the smaller vessels.

The findings at operation which establish a diagnosis of sinus phlebitis differ in the acute and in the chronic cases. An abscess with granulations present in the sinus wall should be viewed with the utmost suspicion. The obliteration of every sinus wherein an extensive periphlebitis is found should be affected.

The blood culture is a valuable aid in the diagnosis of sepsis. The limitations, however, must be understood before its value can be properly estimated. In almost every case of sinus phlebitis the total number of white cells and the percentage of polynuclears will be increased. In the presence of a persistent postoperative leucocytosis a sinus phlebitis should be suspected. A gradual fall in the red blood cells and haemoglobin after the primary mastoid operation indicates the

continuance of a septic focus. Transfusion is resorted to only when the haemoglobin is low or has shown a gradual reduction.

Correlation of symptoms will lead to an earlier diagnosis of sinus phlebitis and early surgical intervention.

In cases of sinus thrombosis, safety lies in the ligation of the jugular vein. When, after the removal of the thrombus and obliteration of the sinus with resultant free bleeding from the bulb, the blood picture shows a return to normal the jugular operation may not be necessary.

An unusual case of primary bulb thrombosis with recovery is presented and discussed.

**Further Observations on the Ethmoid Problem.** Skillern, R. H.: *Ann. Otol., Rhinol. and Laryngol.*, 1928, xxxvii, 173.

The author discusses in detail the problem of the ethmoid labyrinth. He is of the opinion that in many instances unsuccessful or even harmful results have followed extensive surgery of the ethmoid body proper. The complete removal of the middle turbinate without interference with any portion of the ethmoid capsule is advocated in those cases in which no surgery had been attempted previously. This procedure not only insures thorough aeration of the entire ethmoid and adjacent areas, but also favors resolution or localization of the infection and thus makes the infection more amenable to surgical treatment.

The author believes that the sacrifice of the middle turbinate is fully justified and that the physiological importance of this structure is often exaggerated. The removal of the middle turbinate by means of the scissors and snare is favored. On account of the danger of primary or secondary hemorrhage the posterior tip is usually left in situ.

Turbinectomy should be considered as a preliminary procedure to be followed in four or five days by the institution of daily treatment. Cotton tampons saturated in a fresh, warm solution of 25 or 50 per cent argyrol or an allied drug are placed in the upper pole of the nose and left there for from four to six hours. The average duration of the treatment is about four or six weeks with gradual lengthening of the interval between treatments. This use of the tampons in combination with surgical interference has given very satisfactory results.

Cases which have been operated upon previously present individual problems. The author believes that complete removal of the uncinate process is important.

**Apical Infection, Bulleid, A.:** *Proc. Roy. Soc. Med., Lond.*, 1928, xxi, 801.

Bulleid thinks that rarefied areas probably represent the commonest and most dangerous type of "apical osteitis," because there is no local resistance to the spread of the infection directly into the blood stream. Tissue resistance is indicated, however, by the presence of granulomata, which are most commonly found on dead teeth where there is drainage.

The author says that dead teeth which have root fillings extending to the apex are most likely to show apical osteitis. If skiagrams demonstrate the presence of osteitis at the apices of dead teeth which have no root-canal fillings or only partially filled canals, extraction will prove in a certain portion of these cases that there is an adherent granuloma.

## DERMATOLOGY AND RADIO-THERAPY

Edited by C. P. Bondurant, M.D.  
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**Pemphigus: The Use of Whole Blood Transfusion as an Aid in Therapy. Preliminary Report. L. Hollander.** *Brit. J. Dermat.*, 39:450, Nov., 1927.

This writer gives reports on six cases of pemphigus vulgaris in which whole matched blood had been used in treatment. There was marked improvement in the general skin picture in five of the cases, and in the sixth case death from intercurrent acute infection prevented observation. The author is encouraged from these results from the effect of transfusion of whole blood to recommend this form of therapy and considers it worthy of further study in a more extensive group of cases. He also suggests the possible advantageous employment of this method in other serious dermatoses such as exfoliative dermatitis, and dermatitis herpetiformis. The following procedure is employed: the patient's blood is typed and donors selected accordingly. Direct transfusion is done of 500 to 600 cc. and this is repeated from three to six times at weekly intervals. The reactions are negligible, the common symptoms are mentioned. For these he uses 10 m. of 1:1000 epinephrine hydrochloride intradermally while the patient still remains on the table.

**Porokeratosis: Its Causation and Treatment. Hugh W. Acton.** *Indian J. M. Research* 15:349, Oct. 1927.

Although porokeratosis is a distinct clinical entity, it is merely a form of hyperkeratosis. Clinically it is characterized by the occurrence of raised corn-like lesions which form an irregular raised wall with an atrophic depressed center as they enlarge. It is characterized histologically by an increased vascularity of the papillary vessels which produces an acanthosis with hyperkeratosis. As this vascularity continues endothelial cells and fibroblasts multiply in the corium and form a constriction of the vessels. The atrophy from this constriction gives the depressed pigmented wrinkled center. Familial tendency associated with a lowered basal metabolic rate is suggestive of a partial hypofunction of the thyroid gland. This is not a complete correlation as these lesions are not commonly seen in other conditions of hypofunction of the thyroid, myxedema, cretinism. These lesions respond very quickly with the proper thyroid medication. Porokeratosis, therefore, is a localized keratosis and falls into the large group of so-called skin diseases, xeroderma, scleroderma, keratosis, follicularis and morphea, which are all partially associated with a hypofunction of the thyroid. The writer gives these conclusions as the result of investigation in eight cases.

**Result of a Review of Cases of Accident and Injury in Roentgen Establishments in Germany. Heinz Lossen,** *Acta Radiol.*, 1927, viii, 345-362.

Resulting from a plan suggested first by Groedel, a collection was made of roentgen accidents occurring in Germany. This report is made up of the studies arranged from 183 cases of which four were erroneously reported as roentgen injuries. The remainder of the cases were divided as follows, of the 53 injuries occurring during diagnostic procedures, 27 occurred during roent-

genoscopy, 15 in roentgenography, and 8 in a combination of the two; 120 of the cases were injured during therapeutic procedures, 62 with deep therapy and 58 with surface radiation. The association of chronic external irradiation with roentgen irradiation was held responsible for the late appearance of the late roentgen injuries. Individuals suffering from cumulative effect of numerous treatments, overlapping fields, incorrect dosimetry readings, activation of old tuberculosis and improper after treatment represented another group of cases. The following contraindications to roentgen irradiation are the result of this analysis.

**Absolute Contraindications:** Active roentgen injury.

**Relative Contraindications:** (1) Inactive roentgen injury; (2) infancy and childhood; (3) pregnancy; (4) diseases, (a) of the skin, (b) constitutional diseases (Addison's disease, diabetes, gout; (c) Basedow's disease; (d) infections, (e) nephritis; (f) marasmus (5) scar tissue; (6) medication with adrenalin, quinine, iodine, salvarsan, terpens, irritating salves, plasters, poultices; (7) physio-therapeutic treatments; (a) radiant energy; (b) radiotherapy with radium, mesothorium, etc., and (c) hyperemia with stasis. This study is being continued.

**Progress and Prospect in Treatment of Cancer.**  
Robert B. Greenough, Surg., Gynec. and Obst.,  
xlvii, 159-160, January, 1928.

The committee on the treatment of malignant diseases with radium and X-ray of the American College of Surgeons is attempting to make available for study some of the great mass of surgical material which may aid in producing an answer to disputed points in regard to the treatment of cancer in its usual sites. In order to provide a uniform basis of study the committee suggests two things: (1) to establish a uniform method of classifying and recording cancer cases, and (2) to establish criteria which could be accepted in every clinic in regard to records for consideration. One preliminary report of the three year end results of the treatment of cancer of the cervix was published in 1924. Reports now in preparation carry the cervix cases to a five year end result and material for a report of the same nature on cancer of the breast is being analyzed. Abstracts have been collected and prepared of records on cancer of the mouth and tongue, cancer of the rectum, and of the ovary. Those things which are noted in surgical treatment of cancer are likewise true of its treatment by radio-therapy. Inadequate apparatus and perfunctory manner of treatment offer little advantage to the patient. This especially applies in regard to radiation therapy with a frequency of inaccurate records and a defective follow-up system. These facts are cited to justify a special cancer service in general hospitals and are given to urge close association between the X-ray and radium therapist, the surgeon, the pathologist, and the other special branches of medicine. This cooperation and the consultation should be carried on with a view of giving mutual benefit to the doctor in charge and the individual cancer patient.

**Action of Colloidal Lead and Radiation on Tumors.** J. C. Mottram. Brit. Med. Jour., page 132, January 28, 1928.

The author gives evidence to the conclusion that the inoculation of colloidal lead into the circulation is followed by a thrombosis of the blood ves-

sels of tumors. Radiation also causes an interference with the blood supply by producing a thrombosis, apart from its direct action upon tumor cells. The author carried out experiments planned to determine whether by a combination of these two measures this effect on tumors could be accomplished by smaller doses of lead and thus avoid its toxic effects, and likewise the detrimental effects of radiation on normal tissue which is necessarily exposed. The results from this work seemed to indicate the value of this combination of treatment and to give reason for a further trial in cases of patients suffering from cancer.

## UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.  
1010 Medical Arts Building, Oklahoma City,

The mirror has a great influence on sexually suggestible people.

A normal elimination of urea does not exclude the existence of a pyelitis.

Do not promise that symptoms will be completely relieved by a renal fixation.

Be sure to examine the urine carefully in all cases of stubborn eczema about the genitals.

In treating a trigonitis by local applications, have the bladder mucosa as dry as possible.

A tender kidney may be a normal kidney doing the functional work of its disabled mate.

Do not attempt an abortive treatment of gonorrhea except in the very beginning of the infection.

The best guide to urethral dilation is the sensibility of the urethra; do not use a local anesthetic.

If a patient passes a long, worm-like clot, you may well suspect the source of bleeding to be renal in origin.

Always think of the possibility of pyelitis whenever there is pain anywhere in the abdomen, even if fever be absent.

Infection of the parenchyma of the kidney is most often due to hematogenous infection, pyelitis to ascending infection.

The gonococcus is rarely found alone in chronic gonorrhea, and it is never the predominant organism in this disease.

The colon bacillus may in time supplant the gonococcus and thence proceed up the ureteral lymphatics to the renal pelvis.

A right-sided pain which persists after a removal of the appendix should be sufficient reason for making a thorough cystoscopic and radiologic examination. Appendicitis is sometimes diagnosed when a ureteral stone is the trouble.

Never abandon the search for the tubercle bacillus in the urine from a pus kidney of obscure etiology. The tubercle bacillus is never given off continuously, but only intermittently. Make daily examinations and guinea pig inoculations.

In synovitis always suspect syphilis. Even with a negative Wassermann give anti-syphilitic treatment to start with, and never fix the joint until syphilis is absolutely excluded. Plaster casts have often caused permanent ankylosis in syphilitic joints.

**Suprapubic Prostatectomy.**—John M. Birnie (*New England Journal of Medicine*, September 6, 1928). In order to overcome the difficulties of the two-stage operation, consisting of two cystotomies, the operative wounds of which are located several inches apart (one and one-half to two inches on either side of median line). One incision is used for drainage and the other for removal of the prostate, and the latter is closed tight. By this means, the advantages of preliminary drainage of the bladder are obtained without sacrificing, in any way, the benefits of removing the prostate under the constant guidance of the eye, a procedure hitherto only attained with a one-stage prostatectomy.

**"Bladder Troubles of Appendicular Origin.**—G. Carajannopoulos and Cr. Grigorakis (*Journal d'Urologie*, July, 1928,) state that the influence of appendicitis on the bladder is well known. One of the most common bladder signs in acute appendicitis is dysuria. The inflammatory process is transmitted from the appendix by way of the perivesical tissue to the bladder with a resultant acute systitis. Occasionally one may find more serious bladder complications. Thus, the authors cite cases of bladder perforation, hematuria, and bladder abscess in cases of abscess of the appendix.

**Oral Therapy in the Treatment of Gonorrhea and Other Urinary Infections.**—Abr. L. Wolbarst (*Medical Journal and Record*, September 19, 1928) considers the use of pyridium, a hydrochloric acid salt and substitution product of pyridin. He finds that in male gonorrhea there is a decided amelioration of the subjective symptoms; in posterior urethral invasion with prostatic involvement pain is quickly relieved and urinary frequency restored to normal; and the urine clears more quickly in both acute and chronic cases. As a general urinary antiseptic pyridium is effective as an adjuvant to instrumental measures in pyelitis and other upper tract infections of staphylococcus and bacillus coli origin. In cases of trigonitis in women, it proves productive of excellent results. In one case of non-venereal prostatitis in a boy of fifteen, with marked urinary symptoms, prompt relief was obtained.

**Prostatic Backache as a Cause of Prolonged Disability Following Injury.**—L. R. Boies (*Minnesota Medicine*, September, 1928,) states that the prostate as a focus of infection is probably of much greater incident than is generally realized. Chronic prostatitis is a frequent cause of backache. It is this referred pain, the basis of which is unrecognized, which is so frequently the cause of prolonged disability after minor back injury. Rectal examination is important in every general physical examination, and if there should be any

suggestion of the possibility of a focus of infection somewhere in the body, microscopic investigation of the prostatic and vesicular expression should be carried out. Again, absence of objective enlargement upon digital examination, or of symptoms, does not exclude the prostate as a seat of infections. Finally, no orthopedic procedure is justifiable in back injuries with obscure findings as long as the prostate presents evidence of infection.

**Tumors of the Kidney.**—Winfield Scott Pugh (*Medical Journal and Record*, August 15, 1928,) gives a discussion of kidney tumors, treating classification and symptoms (cardinal and general) with the purpose of presenting an aid in the early diagnosis and treatment. Five cases are described in illustration of points made in his discussion. Kidney tumors are practically all malignant. The appearance of the three so-called "cardinal symptoms" (hematuria pain and tumor formation) usually means that we are too late. Urinary symptoms, such as urgency, frequency and dysuria, are usually the forerunners of the cardinal symptoms. In these cases and most decidedly with hematuria there must be a complete urological examination. An examination should never be delayed in the presence of hematuria which is always a sign of danger. A pyelogram usually clinches the diagnosis, and no examination is complete without it. If there is any doubt after the pyelogram, and exploratory nephrectomy should be done.

**Anuria.**—Daniel N. Eisendrath (*Minnesota Medicine*, July, 1928,) presents a comprehensive discussion of this important subject. In cases of oliguria or anuria it should be remembered that the majority of anurias are due to some form of obstruction at the outlet of the renal pelvis or distal to it, a state of affairs demanding a urologic examination immediately. In treatment, ureteral catheterization offers the best outlook in case of obstructive anuria and should be given a trial of 48 hours but not longer. The author describes five cases in which the anuria was completely or temporarily relieved by ureteral catheterization.

**The Urinary Tract and Intra-Abdominal Symptoms.**—A. J. Sparks (*The Journal of the Indiana State Medical Association*, September 15, 1928,) considers the question of ureteral obstruction as the cause of vague intra-abdominal symptoms. From observations of Hunner made in a series of cases in 1918, we note that frequently the urinary tract is overlooked in the consideration of intra-abdominal symptoms. Walther in 1922 also reported a series of cases which, operated on without relief, were demonstrated to have urinary tract pathology. Diagnoses made on patients, later proved to have ureteral stricture, include pelvic inflammatory disease, ovarian disease, functional disorders of the gastro-intestinal tract, chronic peritonitis, intestinal adhesions, sigmoid adhesions, colitis, chronic pancreatitis, gallstones, joint pains, neuralgia of the sacral plexus and sciatica. Besides stricture of the ureter, we see, less commonly, small ureteral stones which do not cause complete blocking of the urinary outflow, ureteral kinks due to inflammatory bands and nephroptosis, and obstructions caused by pressure upon the ureter by abnormally placed vessels. The author describes three illustrative cases of his own, comprising ureteral obstruction due to ureteritis (stricture), blocking by an aberrant artery in a band of adhesions, and kind due to nephroptosis.

## TUBERCULOSIS

Edited by L. J. Moorman, M.D.  
912 Medical Arts Bldg., Oklahoma City

### Miliary Tuberculosis in Children.—Joseph Greenyard. *Amer. Rev. of T. B.*, October, 1928

This is a report of 54 cases all of which terminated fatally, 35 came to autopsy; 79.5 per cent were under five years of age, and 20.5 per cent were between five and 11 years; 23.9 per cent were contact, while in 72 per cent exposure was denied although the author states the information obtained was unreliable.

Vomiting occurred in 30 cases, cough in 20, fever in 22, convulsions in 15, drowsiness or stupor in 16, and loss of appetite and weight in 16. Pain in chest, hemoptysis and night sweats, findings considered rare in childhood, were all observed by the parents in this series.

Lung findings were noted in more than half the cases, consisting in disseminated fine moist rales and areas on dullness at times. Enlargement of the spleen and liver occurred in a small number (the spleen was studded with tubercles in 80 per cent of the autopsied cases). An antemortem diagnosis of tuberculous meningitis was made in 39.

A leucopenia was found in the majority of cases, only six cases showed a high count; 23 cases were x-rayed, miliary involvement of the lungs was noted in 13 plates, two showed evidence of consolidation, six showed hilum increase but no pulmonary involvement and two were negative. Miliary tubercles became apparent only when surrounded by small bronchopneumonia areas, then giving the typical snow-storm shadow.

Lumbar puncture was done in 44, 35 of the fluids were clear and colorless, six were turbid and three were clear yellow.

Globulin reactions were positive in 30 and an increase in the number of cells was noted in 39, the lymphocytes predominating in all but two fluids. Microorganisms were never found in stained smears antemortem.

Pathology miliary distribution was as follows: Leptominges 28 cases; brain, three; lungs, 29; liver, 28; spleen, 28; stomach and intestines, four; pancreas, one; omentum, one; peritoneum, six; epicardium, one; kidneys, 18; bladder, one epididymis, one; adrenals, three; skin, one; diaphragm, one.

Caseous and ulcerative lesions occurred in the lungs in 24 cases and in tracheobronchial lymph nodes in every case examined. The mesenteric lymph nodes were involved in 14 of the cases.

### The Incidence of Pleural Lesions as Shown by Roentgenographs in Children Known to be Tuberculous. Lloyd B. Dickey and L. H. Garland, *Amer. Rev. Tb.*, October, 1928.

Of the series of 327 positive tuberculin reactors, 234 or 71.5 per cent showed evidence of pleurisy; 168 or 51 per cent of the films showed thickening of one or more of the interlobar septa; 172 or 52 per cent showed apical pleural thickening; nine or 2.8 per cent showed thickening of the pleura other than apical or interlobar; 12 or 3.7 per cent showed evidence of adhesions between the visceral and parietal pleurae; 11 or 3.3 per cent showed evidence of pleural effusion; 107 or 46 per cent of the total showing evidence of pleurisy, showed

also distinct evidence of hilum and node enlargement.

### The Duration of Life in Pulmonary Tuberculosis With Cavity. Harry L. Barnes and Lena R. P. Barnes. *Amer. Rev. Tb.*, October, 1928.

This is a review of 1453 cases; 80 per cent died within one year; 82 per cent died within two years; 85 per cent died within three years; 90 per cent died within five years; 95 per cent died within 15 years.

Ninety-nine per cent of 616 cavity cases diagnosed by x-ray had tubercle bacilli in the sputum.

Right lung cavity cases had slightly more survivors and lived slightly longer than left.

The duration of life bore a direct relation to the number of cavities. Of 17 cases having more than three cavities, none survived a year.

### Tuberculous Granuloma of the Bronchus—Report of a Case. Phillip Schonwold. *Amer. Rev. of Tb.*, October, 1928.

A case of tuberculosis is presented in which a tuberculous laryngitis and a granuloma in the mucosa of the right bronchus at the bifurcation developed after a spontaneous cure of tuberculous peritonitis. The laryngitis improved greatly, but the narrowing of the right bronchus caused stagnation of purulent material in the right lung, followed by atelectasis of the right lower lobe, the spread of the infection throughout the entire right lung, and finally spontaneous pneumothorax of the right upper lobe.

The mucosa presenting almost a pure culture of tubercle bacilli was of extreme viscosity, and its stagnation, after the pneumothorax, had prevented cough, brought about asphyxiation.

### Broncholithiasis—Report of a Case. Barnett P. Stielman. *American Rev. of Tb.*, October, 1928.

An Austrian stone-grinder, age 51, complained of weakness, occasional afternoon fever, loss of weight, frequent spasmodic cough followed by profuse expectoration, and expulsion of lung stones.

Examination of chest revealed extensive emphysema and evidence of fibroid phthisis, with bilateral cavitation and questionable silicosis. The nails were curved and fingers clubbed slightly. Sputum at first negative, was soon found to contain many tubercle bacilli.

While in the hospital (16 days) cough increased, fever mounted, there were progressive dyspnoea and loss of weight and strength. Death occurred after development of an extensive spontaneous pneumothorax on left side. More than 40 stones were expelled during paroxysms of cough. Chemical analysis of the stones showed calcium phosphate and calcium carbonate impregnated with particles of carbon.

### Bronchial Irrigation. C. L. Wayman. *Amer. Rev. of Tb.*, October, 1928.

The author reports three cases, all of which were benefitted by the treatment. For tuberculous cavity, bronchiectasis and lung abscess a 5 per cent solution of calcium chloride in distilled water was used. For chronic bronchitis a 10 per cent solution of alkaline antiseptic.

The method is described in detail.

**Pulmonary Sporotrichosis.** J. J. Singer. Amer. Rev. of Tb.

This is a report of three cases, all of which improved following the administration of potassium iodide.

**Laryngeal Tuberculosis.** Edward A. Looper and Leo V. Schneider. Jour. A. M. A., Oct. 6, 1928.

Laryngeal complications occurred in 15 to 30 per cent of all cases of tuberculosis. It is secondary to pulmonary infection and occurs most frequently between 20 and 40 years of age.

A number of cases are reported which were treated by electrocautery. In the patients with moderate lung involvement 65.5 per cent were improved and healed and 26.5 per cent with far advanced lung involvement were improved and healed. In many patients the cautery treatment exercised a favorable influence of the lungs and on the general condition. The cauterization was done under local anesthesia at monthly intervals. Experiments have proved that cauterization produced an inflammatory reaction of the tissue, with the development of new blood vessels, congestion and fibroblasts in the avascular tubercle, giving it necessary nutrition and resistance.

Vocal rest or absolute silence is advised in all suggestive cases. Cooperation between laryngologist and clinician is very important.

## BOOK REVIEWS

**BACTERIOLOGY FOR NURSES**—By Chas. F. Carter, B.S., M.D., Director, Terrell-Carter Laboratories, Dallas; Director, Laboratories, Parkland Hospital; Lecturer, Bacteriology and Pathology, Parkland Hospital School of Nursing. Illustrated, cloth, 213 pages. Price \$2.25. C. V. Mosby Co., St. Louis.

**A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS**—By Hugh A. McGuigan, M.D., Professor of Pharmacology and Therapeutics, University of Illinois, School of Medicine, Chicago. Octavo volume of 660 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1928. Cloth, \$6.00 net.

**AN INTRODUCTION TO EXPERIMENTAL PHARMACOLOGY**—By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica at Western Reserve University, Cleveland, and Paul J. Hanzlik, M.D., Professor of Pharmacology at Stanford University, San Francisco, Calif. Octavo volume of 321 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1928. Cloth, \$4.25 net.

**BLOOD AND URINE CHEMISTRY**—By R. B. H. Gradwohl, M.B., Director of the Gradwohl Laboratories, and Ida E. Gradwohl, A.B., Instructor in the Gradwohl School of Laboratory Technic., St. Louis. Cloth, 542 pages, with 117 illustrations and four color plates, 1928. Price \$10.00. C. V. Mosby Co., publishers, St. Louis.

Accurate determination of the blood and urine chemistry is so important that no internist or surgeon today would think of undertaking the grave responsibilities of practice without constant check-up pre and postoperative, as well as during the course of many conditions. This is intended as a text book and guide for laboratory

workers and physicians. The subject matter embraces everything necessary to a proper understanding of the very complex problems involved.

**SYPHILIS — ACQUIRED AND HEREDOSYPHILIS**—By Charles C. Dennie, B.S., M.D., Assistant Professor of Dermatology and Syphilology, University of Kansas School of Medicine, Chief of Heredodysphilitic Clinic, Children's Mercy Hospital; Chief of Syphilitic Clinic, Kansas City General Hospital; Dermatologist and Syphilology, St. Luke's Research, and St. Mary's Hospitals. Illustrated, leather, 304 pages. Price \$2.50. Harper and Brothers, New York.

This is one of the series of Harpers' Medical Monographs and is especially prepared upon the theory that most general practitioners are too busy as well as disinclined to make a large outlay in expensive reference books on the varied types of problems they are called upon to meet. It has long been felt that much of the vast mass of symptomatology, diagnostic and treatment means should be condensed into monograph form for the use of men too busy to delve through the great mass of rapidly accumulating literature of every medical subject. This work meets this indication so far as syphilis is concerned.

**UROLOGY—A TEXT BOOK FOR STUDENTS AND PRACTITIONERS**—By Daniel Eisendrath, M.D., Attending Urologist, Michael Reese and Chicago Memorial Hospitals; Assistant Professor of Surgery (Genito-Urinary), Rush Medical College of the University of Chicago, and Harry C. Rolnick, M.D., Associate Urologist Mt. Sinai Hospital; Adjunct Urologist Michael Reese Hospital; Formerly Associate in Genito-Urinary Surgery, Northwestern University Medical School. 700 black and white illustrations, 11 in colors. Cloth, 942 pages. Price \$9.00. J. B. Lippincott Co., 1928, Philadelphia.

This work is divided into seven subdivisions to care for the 59 chapters. Chapters one to 11 consider the fundamentals necessary to understanding of urologic problems. These are followed by sections upon Gonorrhoea and Venereal Ulcers, Male Genitalia, Bladder, Ureter, Kidney and Operative Technic. The final chapter of this subdivision is devoted to Interpretation of Hematuria and Pyuria. Dr. Eisendrath has been known as master of the arts and sciences of urological problems for many years. This volume is a reflection of his wide experience and practice and is worthy of close study by the man interested in the many phases of urology.

**PROBLEMS IN SURGERY — UNIVERSITY OF WASHINGTON GRADUATE MEDICAL LECTURES FOR 1927**—By George W. Crile, M. D., edited by Amy F. Rowland. Octavo volume of 171 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1928. Cloth, \$4.00 net.

This fine little volume consists of six lectures delivered by Dr. Crile during the summer of 1927 as the Course of Graduate Medical Lectures of the University of Washington; the subjects are: The Management of Acute Infections, A General Consideration of the Treatment of Premalignant and Malignant Conditions, Operations on the Bad-Risk Patient, The Mechanism of Hyperthyroidism, Diagnostic and Operative Clinics and A Bipolar Interpretation of Certain Normal and Pathological Conditions. It is needless to say that the work is intensely interesting.

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# THE JOURNAL

OF THE

## OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXI

MUSKOGEE, OKLAHOMA, DECEMBER, 1928

NUMBER 12

### **PATHOLOGY OF TUBERCULOSIS**

H. G. JETER, M.D.  
OKLAHOMA CITY

#### *Introduction—*

The pathology of tuberculosis has been a subject of very great interest to medical philosophers for many years. It was known in all its forms long before the discovery of its causative agent by R. Koch in 1882. The name, tuberculosis, refers to the characteristic lesion, the tubercle, which means literally, in the Latin, a small swelling. Dr. Gross in his most excellent text book of Pathological Anatomy, published in 1845, describes in detail the lesions of tuberculosis and the incidence in different organs of the body. These observations, as he states, "were founded on careful autopsy inspection. Many of his contemporaries, both in Europe and America, made similar observations, and most of the authorities of the nineteenth century seemed to agree that they were dealing with a contagious disease. However, it is interesting to note that Dr. Gross enumerated the many opinions of pathologists respecting the nature of the tubercle and accepted the doctrine of inflammatory origin. Among the opinions considered was one of Dr. Baron, an eminent English physician, that the tubercles were real products of "animalcules". But this view was disregarded as "not even plausible" and "unworthy of further notice". Koch, about forty years later, succeeded in first demonstrating the bacillus tuberculosis; in securing pure cultures of the bacillus and in perfecting successful animal inoculation experiments. So, today we can consider the pathology of tuberculosis with two great fundamental facts in mind, namely, that it is an inflammatory disease and that the bacillus is a specific etiological agent.

*Inflammation.* What is inflammation? It is the reaction to an injury or the response of the tissue of the body to micro-

organisms, a chemical, trauma or a combination of one or more of these agents. There is a more or less specific response for each different type of injury depending upon the injurious agent. For example: Peyer's patch produced by the bacillus typhosus, the gumma by the treponema pallida, the boil by the pyogenic micrococcus, the cicatrix by the escharotic, the blister by the burn and so forth.

*The Injurious Agent of Tuberculosis.* The agent which causes the injury in tuberculosis is a slender, often slightly curved, sometimes branched, rod shaped microorganism. The individual rods may occur singly but often lie in small heaps. Vacuoles are sometimes observed and not infrequently the bacillus has the appearance of a chain of cocci.

The composition of this offending agent differs considerably from most bacterial and recent investigations by Dr. Krause and others seem to indicate that this fundamental fact may account for some of the peculiar lesions which we all know to be common in tuberculosis. We shall assume, then, that as an injurious agent, responsible for this disease, bacillus tuberculosis is a microorganism composed of wax or fat and protein. The waxy capsule probably explains its staining characteristics of retaining certain stains even when washed in acid. We shall refer to the protein later in consideration of the allergic reaction.

*Avenues of Infection.* The reaction to infection in tuberculosis brings us to a gross and histologic lesion, the tubercle. If we accept the definition of infection as being the invasion of microorganism beyond the normal barriers of the body, we should bear in mind the ever present question: What barriers are let down, or, in other words, what are the avenues of infection? Time does not permit to discuss the many theories in this connection. However, it seems certain that the organisms may enter by way of the upper respiratory tract, the gastro intestinal tract, the skin, the genitals, or other parts, and that having passed the barriers they are transmitted by means of the lymphatic system, the blood

\*Read before the Section on Neurology, Pathology and Bacteriology, Annual Meeting of Oklahoma State Medical Association, Tulsa, May, 1928.

streams or by continuity of tissue. Experiments show that there is a variety of focalization in different animals, regardless of the portal of entry. The incidence is high in the lymphatic system in all animals, especially high in the spleen of the guinea pig and the lungs of the human. It seems generally agreed that focalization is accomplished by the lymph glands.

*Reaction.* The reaction may be said to be of two general types, nodular and non-nodular.

*Nodular.* This refers to the typical lesion of tuberculosis, the tubercle. What is a tubercle? It is a small swelling which appears as the native response to the tubercle bacillus. Histologically it is composed of lymphocytes, so called epithelial cells, fibrinous exudate, fibroblasts and usually but not always, the giant cells of Langerhan's. These are arranged in characteristic manner with the bacillus of tuberculosis and giant cells in or near the centre. The epithelial cells are arranged radically about the center and the lymphocytes scattered around the periphery in a manner to form an outer wall. Sooner or later there occurs a characteristic caseation and necrosis of the centre. From this microscopic sized or miliary lesion we may have the formation of larger or conglomerate masses simply by the union of many tiny lesions.

There is considerable disagreement at the present time as to the derivation of the epithelioid cells. It is agreed that it is not an epithelial cell. It has been called an endothelial cell, histiocyte, reticular cell, fibroblast, monocyte, reticulo-endothelial cell, etc. Dr. Krause, who has done much investigation along this line recently, concludes that the tubercle is a proliferative process and that the epithelioid cells are pre-existing cells in the tissue where the bacillus of tuberculosis happen to localize and that in response to injury, take on the characteristics of epithelial cells. To me such a theory seems to defy the laws of inflammation but is worthy of serious consideration because of the extensive investigation Dr. Krause has done.

There is always an infiltration or proliferation of fibroblasts at the periphery extending inward and in the healed tubercle a dense mass of fibroblasts remains, if ulceration or calcification has not taken place.

Let us then agree that the primary response to the injury is the tubercle either

single or conglomerate and that the termination of this lesion is either ulceration, fibrosis, calcification or a combination of these processes. Whether ulceration, fibrosis or calcification occurs seems to depend upon the dosage (number of bacteria), organ affected and the degree or natural resistance of the body.

*Non Nodular.* This is the reaction which follows the nodular type and the tissue response is that of acute inflammation characterized usually by swelling (tumor), pain (dolor), redness (rubor), heat (calor), and partial loss of function. In this group falls the tuberculous pneumonia, pleural and peritoneal effusions, meningeal and articular exudates, etc. Krause and others by extensive experimentation have advanced good reason to suppose that this stage of reactivity is the allergic reaction or the response to dissociation of the proteins of the tubercle bacilli (tuberculin). There is also much evidence that the necrosis and fibrosis, which is so characteristic, is the direct result of the local effect of this highly poisonous substance. The tubercle, he suggests is the response to the fat or waxy portion of the bacilli.

Next, I shall mention briefly, some of the special forms of tuberculosis.

*Miliary Tuberculosis.* This is doubtless the result of an enormous dose of bacilli getting into the blood stream and, thereby, resulting in thousands of minute millet seed-like tubercles or nodules. This is usually the result of the rupture of some focus where necrosis has extended into a blood vessel because of the lack of sufficient local resistance or perhaps the peculiar localization near a fair sized vessel. It is also considered that the same may occur especially in children when a large number of bacilli first enter the body. There is no reason why several such crops should not successively be set free. We have histological evidence that such does occur and thus the number of bacilli may increase by geometrical progression as do also the number of tubercles. Death, as you know, is the usual result and the severe systemic symptoms are probably due to the combination of tubercle and allergic response. The distribution of bacilli is general but certain tissues such as the skin, thyroid, pancreas and muscle usually, but not always, escape. The spleen, liver, lungs, kidneys and serous surfaces usually are affected. The lesions may be easily seen with the ophthalmoscope in the choroid of the eye.

*Upper Respiratory Tract.* The nose and pharynx may be infected by inhalation or direct inoculation from finger or handkerchiefs. Recently, I have examined tuberculous tonsils from a chronic case with a localized lesion of the hip. Routine examination of tonsils, in my experience, has shown only occasional (about 1%) involvement. Ulceration is the rule if the mucus membrane is affected. Tubercles are formed just beneath the epithelium and when necrosis occurs, ulceration is the result. Tuberculous ulceration of the larynx is common and is no doubt usually due to the passage of sputum in advanced pulmonary infections with cavitation.

*Tuberculosis of the Lungs.* For centuries it has been recognized that the most advanced lesions are at the apex and that the disease progresses downward, usually more rapidly in one lung. The most common site is about one and one-half inches below the summit of the lung in the upper lobe and corresponds to a spot just below the clavicle. The next most common site of primary lesion is the first and second anterior interspaces. There are many forms of tuberculosis of the lungs:

1. *Miliary.* The lesions are very numerous and generally in air cells or terminal bronchioles.

2. *Broncho-Pneumonia.* In a large proportion of the chronic tuberculosis of the lungs the terminal bronchioles are involved and that region, therefore, blocked by products of caseation and the result is:

- (a) *Ulceration* — if necrosis occurs rapidly in the wall of the bronchiole, and a small cavity may result.
- (b) *Fibrosis*—occurs if the process is more chronic. This represents the healing of the tubercles and may be any degree of density or even often becomes calcified.
- (c) *Cavitation* — the small cavities are ragged and irregular in outline and contain the caseated products of inflammation and usually numerous bacilli. The process extends by contiguity of tissue and the greater part of the upper lobe may be occupied by one or more cavities. If by continuity of tissue, along the bronchi, bronchiectasis is the result; if a cavity ruptures into the pleural sac, a pneumothorax results; if into a blood vessel, hemoptysis

results. A majority of the cavities in chronic cases have well defined walls composed of fibrous tissue and leukocytes, but even these cavities have a tendency to increase in size. The pleura is involved in practically all cases of pulmonary tuberculosis. This may result in thickening of the pleura, either serous, purulent or hemorrhagic, effusions or adhesions which occur in nearly all cases. Bronchial and peribronchial lymph glands are involved in most of the acute cases. This is especially true in children.

*Gastro Intestinal Tract.* This is a rare form except in children. Occasionally it is seen in adults but is doubtless nearly always secondary. The tubercles are seen first in the lymph follicles but later caseate and form ulcers of the mucosa. The lesions occur most frequently in the distal portion but not infrequently numerous higher up in the tract and in the colon. The ulcers have a tendency to encircle the gut. The margin is ragged, nodular, irregular and undermined. The bacilli are evidently absorbed into the lymph channels in which situation they cause obstruction causing the lymphatics to become conspicuous. The mesenteric glands sooner or later receive the infection and show tubercle formation. One or more large masses may form and obstruct the lumen of the gut in a manner to simulate malignancy.

*Tuberculous Peritonitis.* The types of tuberculous peritonitis seem to depend upon the number and virulence of the organisms. Effusion and chronicity is the rule. Small tubercles are usually scattered over the peritoneum.

*Tuberculosis of Pericardium.* This is not as common as that of the pleura and peritoneum but perhaps more common than is generally supposed. A small heart and probably an acute atrophy of the myocardium is the general rule in chronic tuberculosis without a pericarditis.

*Lymphatics.* It is generally agreed that the incidence of tuberculous adenitis is greater than in any other organ, the lungs not excepted. Tuberculosis is to be remembered as a constitutional disease, thought by many to spread by way of lymphatics and whether this be true or not, careful physical examination usually reveals lymphadenitis.

But there is the so called tuberculosis of the lymph glands or scrofula, seemingly a primary disease of the lymphatics with marked swelling of the glands and very little or no involvement of the lungs. The focalization is thought to be in the glands, perhaps through tonsils or some other accessible peripheral glands. Some have suggested that the bacilli are a different strain in this disease. The outstanding features are: (a) A tendency to involvement of a local group, such as the cervicals, the mediastinal or mesenteric. (b) A tendency to spontaneous healing in a great proportion of the cases. (c) Not infrequently, there is suppuration and spontaneous drainage. In this event healing is often prolonged. (d) This form of tuberculosis is very common in children, especially in the colored race. Proliferation, necrosis and calcification is the rule. Calcified mesenteric glands — demonstrable by the X-ray, in children are therefore thought to be especially significant.

*Bones and Joints.* The infection in this case is thought to be nearly always, if not always, secondary and by way of the blood stream or contiguity of tissue. Traumatism is doubtless an important predisposing factor. The lesions nearly always begin in the bone, but practically never in the shafts. Bone destruction and extension into the cartilage and membranes of the joint is the rule and bone production in the uncomplicated cases with no secondary invaders, is thought by many not to occur. Miliary tubercles form on the surfaces and necrosis leads to extensive excavation into the bone. Fistulae not infrequently result and burrow through the muscles and fascia. A cold abscess may result. Tuberculosis of the spine usually leads to angulation, obliteration of the intervertebral space and destruction of the body of the vertebra. This disease is by far most common in children.

*Genito Urinary Tract.* It is a debatable question as to how the infection gets to the kidneys but it seems likely that it is by the blood streams and that the kidneys are always secondary to some other focus. This disease begins as numerous tubercles in the cortex and medulla of one or both kidneys followed by necrosis and destruction of the parenchyma, which usually terminates in drainage into the pelvis and hence a pyelitis. The kidney as a result is greatly enlarged but may contract and become atrophic. Consequently the ureter is inflamed by direct extension and the wall

becomes thickened, tortuous and irregular. Cystitis is considered by most observers to be always secondary to the tuberculous kidney and a diagnosis of tuberculous cystitis, therefore, means tuberculous involvement of one or more kidneys.

Tuberculosis of the epididymis occasionally occurs but involvement of the testicle or seminal vesicle is rare. Ovaries are also usually exempt but tuberculosis of the fallopian tube is not exceedingly rare.

*Meninges.* This is a common disease of Children and is thought to be a complication of generalized miliary tuberculosis. In adults the process is always secondary but fortunately comparatively rare. Tubercles first form on the surface of the brain or cord and are followed by perivascular involvement of the meninges. Brain and cord tubercles without meningitis are occasionally observed. The size of such tumors varies from microscopic size to two or three cm. or larger.

*Important Laboratory Diagnostic Tests.* There are many laboratory tests which are being used as aids in diagnosis of tuberculosis but only a few which seem to be of practical interest for the practitioner today. It goes without saying that in many cases the diagnosis is obvious and it might be said that laboratory confirmation is unnecessary but there is perhaps an equal number of cases, the diagnosis of which is uncertain.

1. *Tubercle Bacilli.* A direct smear from the selected caseous portions of the necrotic and exudative material from a tuberculous lesion, often leads to a conclusive diagnosis. The acid fast stain of carbofuchsin washed by a 2 per cent alcoholic solution of hydrochloric acid or 25 per cent solution of sulphuric acid and counterstained by methylene blue, can be safely done by any capable technician or doctor in a few minutes' time. Many methods of concentration are recommended. In our hands the method of using an aqueous solution of 2 per cent sodium carbonate and 2 per cent phenol to digest the mucus, deodorize and sterilize the specimen, seems the most satisfactory. It has the advantage that all bacteria are concentrated and the predominating microorganisms can be determined, as well as the tubercle bacilli. I believe it the duty of every physician to make repeated tests for the acid-fast bacilli and tell the patient what is found. Repeated negative sputa in pulmonary tuberculosis, I believe, should make the diagnosis very

uncertain and the complete record of the case should be reviewed again. I am sure each of you have had patients tell you of having had tuberculosis elsewhere and under the care of another physician. No greater assurance of a correct diagnosis having been made, could be given you by that patient than for him to say that his doctor had previously examined the sputum and found the germ of tuberculosis.

2. *X-Ray examinations* need only to be mentioned by way of saying that if the characteristic lesions as described above are demonstrated, the diagnosis is substantially established and furthermore a record is made which in some cases is invaluable in determining the progress of the disease.

3. *Tuberculin Tests.* By the tuberculin test we refer to a test of the tissue reactivity to the dissociated protein of the pure culture of bacilli of tuberculous. It is convenient to speak of this substance as an endotoxin since it is only obtained through the destruction of the bacteria and not simply present in the liquid in which the culture is grown. It is also of practical importance to remember that the various methods of standardization are used by different biological houses. (Tuberculin—A Report of a Conference on its Standardization—Am. Review of Tuberculosis, July, 1926.) Any form of tuberculin reaction indicates tuberculous infection but the different forms give different information. It is specific to the extent that a very small amount of tuberculin produces it in tuberculous tissue but no amount of tuberculin will produce it in non-tuberculous tissue. The intense general reaction in advanced cases is due to the presence of large amounts of tuberculous tissue with a great tendency to break down and set free the toxin. Favorable and cured cases show slight general reaction. The local reaction only shows that tuberculous infection has taken place, it gives no information as to the site, extent or degree. It is interesting to note that the weak reaction in progressive processes are not capable of being increased by a second tuberculin injection, while in cases that are in process of healing, the reactive capacity is increased and the second injection gives a much stronger reaction than the first. The general rule is that severe cases show a strong general and a slight local reaction; benign cases show a moderate general, but as a rule, a strong local; while inactive cases show a slight general reaction and also a slight local reaction which, however, is capable of being increased.

There are many methods of procedure in making the test. The Von Pirquet test seems to have proven to be the simplest and as efficient as any. Although some prefer the intradermal method. The forearm is usually selected for convenience, and two areas scarified and exposed to the tuberculin. A control should always be made. Dr. Stewart, professor of pediatrics, University of Minnesota, recently reports a very simple puncture method, whereby a drop of tuberculin is placed on the skin and a simple puncture made through the drop and into the skin. This procedure gave 100 per cent positive in 223 cases, as compared with the old scarification method.

There are in my mind doubtless many cases which are clinically borderline as to diagnosis, in which the tuberculin test can be used to advantage.

4. *Biopsy.* It goes without saying that the prognosis and treatment of glandular enlargements depends much upon the early diagnosis. In my experience about two out of three histological examinations from cases suspected of neoplasia involving the lymph glands, have resulted in a diagnosis of tuberculosis. It is to be remembered that glandular tuberculosis very often does not give the usual chest findings and characteristic points in the history.

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#### EARLY TUBERCULOSIS OF THE KIDNEY\*

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It is quite generally conceded that tuberculosis is not primary in the kidney. Quite often, however, it is not possible to demonstrate tuberculosis anywhere else in the

\*Read before the Section on Neurology, Pathology and Bacteriology, Annual Meeting of Oklahoma State Medical Association, Tulsa, May, 1928.

body when a kidney is definitely infected. That the infection is carried by the blood stream is also generally accepted.

Except in miliary tuberculosis one kidney alone is involved in the infection for a considerable while before the opposite one is affected. The first part of the kidney to be involved is the tip of the papilla in the vast majority of cases.

The diagnosis can only be positively made by the finding of the tubercle bacilli. In some instances this is comparatively easy. In others the greatest difficulty is encountered. The history and a general examination are of the greatest importance. Exposure to tuberculosis in early childhood is very significant. The presence of tubercular foci elsewhere in the body is of importance. The most common symptoms in order of their frequency are frequency of urination, dysuria and hematuria. Quite commonly one of these appear as the only manifestation; at times two of them; not rarely all three are present. Pain over the kidney is present either in conjunction with the above mentioned symptoms or alone.

Since there is but one treatment for a tubercular kidney it is manifestly mandatory that the diagnosis be correct and that the proper kidney be convicted. This can only be done by a urological examination in conjunction with the laboratory.

I intend to deal in this paper only with early tuberculosis of the kidney. The diagnosis is much easier and much more certain after the ureters and bladder are involved. Then the characteristic lesions around the ureteral opening point a clear way.

An examination to be complete must include both kidneys. It is manifestly unwise to remove one kidney until we know that the other is able to carry on. In beginning tuberculosis of the kidney the lesions are slight. A pyelogram, even in early cases is often suggestive. There is a clubbing of the calyces which is significant, but not diagnostic. Before a pyelogram is made catheterized specimens from each kidney are obtained. At the same sitting the efficiency of each kidney is determined by a dye test. Either indigo-carmin or pheno-sulpho-phthalein may be used. Usually the affected side shows a diminution in the dye output. At the same sitting the status of the well kidney is ascertained should nephrectomy be necessary. The separate specimens should be

examined microscopically and by culture. Occasionally the tubercle bacilli can be found in the centrifugalized specimen. When these are found in the presence of pus cells the diagnosis is clear. Usually, however, a guinea pig inoculation is necessary. This has its drawbacks as from six to eight weeks must elapse before the pigs are killed.

Dr. Joseph V. Mandel of Bruenn, Austria, has an interesting and instructive article describing a culture medium of glycerin-potato which he claimed shortens the period of diagnosis very materially. We have not been using this in our clinic. He makes claim for it that it is more accurate than the guinea pig test and is time saving.

Since this paper is to be followed by papers by an internist and a general surgeon I have purposely dealt just with essentials in the diagnosis without attempting to describe in detail the procedure of catheterizing the ureters, pyelographic medium used, laboratory technic, etc.

#### PROGNOSIS OF TUBERCULOSIS\*

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By prognosis is meant a forecast of the course and termination of a disease, an outlook afforded by such a forecast, an indication of the future by signs and symptoms.

Although the disease may have existed for some time, the battle is just begun when a diagnosis of active tuberculosis is made. How long will the patient be disabled? What plans can he make for the future? Is recovery probable or possible? Tuberculosis was once considered an incurable disease. Today it is considered the most curable of all chronic diseases and is curable in all stages. In the past twenty years the death rate has been reduced from over 200 per hundred thousand to less than 100 per hundred thousand.

It is true that the prognosis depends upon the dose of infection, the virulence of the infection and the resistance of the individual, but in a broader sense it depends upon certain principles of immunity, the extent and form of the disease, the age, the onset, the signs and symptoms, complications, the character and economic condi-

\*Read before the Section on Neurology, Pathology and Bacteriology, Annual Meeting of Oklahoma State Medical Association, Tulsa, May, 1928.

tion of the patient and the advice and treatment given by those responsible for his care.

*Extent.* In approximate figures, 75 per cent of the early cases recover; 50 per cent of those who are moderately advanced may be returned to earning capacity and 25 per cent of the far advanced may be restored to partial or full earning capacity. J. Edward Squires in a report of over 2,000 cases gives the following table:

One lobe involved, 87 per cent arrested;  
two lobes involved, 72 per cent arrested;  
three lobes involved, 58 per cent arrested,  
and four lobes involved, 44 per cent arrested.

*Form.* In the acute pneumonic form the prognosis is bad. It usually means an old chronic form "gone wild" and the defensive powers have little time to limit the action. In the miliary form a few cases have been reported cured but the prognosis is unfavorable because there is a massive systemic infection in which the tubercle bacilli are in the blood stream and may set up activity in other tissues as well as the lungs. In the fibroid and fibro-caseous forms, the forms usually encountered, the prognosis is favorable.

*Age.* The younger the child the worse the outlook. Under six months the prognosis is bad. It is estimated that in the cities 10 per cent of the children under one year of age are tuberculous. In a study of a large group of children whose parents had open tuberculosis, i.e., tubercle bacilli in the sputum, it was found that 84 per cent died by the third year. In a similar number who had the infection but were not exposed to open disease the mortality was 33 per cent. Frequent massive infection is fatal while those receiving infection in a more casual or incidental way from outside sources develop a surprising amount of resistance. Tuberculosis runs a milder course in the aged but is less apt to become arrested than in the young or middle aged.

*Onset.* A sudden onset means no resistance and a bad prognosis. Races that have been exposed to the disease for many generations have a much higher resistance than those exposed for the first time. For example, the Jewish race are more resistant than the American Indian or the negro. In China conditions are favorable for the spread of tuberculosis and the disease is almost universal but the death rate is extremely low. Acute tuberculosis is rare.

One of the South Sea Islands was almost depopulated in two years when the infection was introduced for the first time by English Colonists. It is generally believed that in an adult having the infection for the first time a favorable outcome is not so certain.

Along this line it might be interesting to note that Professor Calmette of the Pasteur Institute has vaccinated over fifty thousand children at birth with a very weak strain of tubercle bacilli and claims to have noted a very marked reduction in the mortality.

*Signs and Symptoms.* Patients beginning with sudden hemorrhage need not feel so gloomy. A very small per cent die of hemorrhage and if there is anything that impresses him with the diagnosis and the necessity for treatment it is this dramatic experience. Statistics show almost as many cures among those who have hemorrhage as among those who do not. The weight or gain in weight has little to do with prognosis. The prognosis is unfavorable in direct ratio to the height and duration of fever. A reversed type, that is high in the morning and lower in the afternoon is bad. A persistent rapid resting pulse is an unfavorable sign. It has been said that a patient who eats well and sleeps well will recover. Low blood pressure, systolic below 100, indicates poor heart action from toxemia and is not a good sign. A positive sputum influences the prognosis considerably. At the Trudeau Sanatorium, Saranac Lake, 1,000 cases were studied. Among those with positive sputum the mortality was 32 per cent. While among those with negative sputum the mortality was 6 per cent. When the symptoms are out of proportion to the signs the prognosis is bad. Lesions on the left side heal more slowly than the right, probably because of the tugging action of the heart. Tuberculous lesions at the base heal slowly because of the greater mobility of that part. A patient showing a well defined line of demarcation between normal and affected parts has a better prognosis than one showing gradual change from normal to pathological lung tissue.

The danger of cavitation varies inversely with the time it takes to produce them. The statement has been made that cavitation indicates immunity. This may be true, but when a large conglomerate tubercle becomes necrosed and excavated, a cavity is left and it can hardly be taken as a good sign. It forms a potential source of

hemorrhage and its walls afford good culture media for the tubercle bacilli. We frequently see cases with large cavities with low toxemia, but they rarely become arrested without compression of the affected side.

The blood count often gives valuable aid in determining the prognosis. A high lymphocyte count with relative low poly count means better resistance than a leucocytosis with a high poly count because the latter indicates extensive secondary infection.

*Complications.* The final outcome may be determined by the complications. Tuberculosis of the throat, intestines, meninges and kidneys have a grave prognosis. The prognosis of intestinal tuberculosis is about what the prognosis of consumption was fifty years ago, and for the same reason—that the only stage under observation is the far advanced. Empyema is a bad complication. Spontaneous pneumothorax has a high mortality, though not as high as formerly believed. Accidental infections such as influenza and pneumonia may reactivate old healed lesions and lay down the barrier for new invasion and change the prognosis from favorable to unfavorable. Tuberculosis of the bones and joints usually yields to proper treatment. This condition is frequently seen with no activity in the lung. The extra pulmonary focus may increase the resistance to the infection or it may be that the enforced rest promotes healing within the lung. Body casts applied for caries of the spine causes limited motion of the chest, shallow breathing and offers favorable conditions for arrest of pulmonary lesions.

An important factor in determining the final result is the family physician or the physician who makes the diagnosis. This is especially true in the light of present special measures of treatment, one of the most important of which is collapse therapy. Success or failure depends upon a thorough study of the case, proper evaluation of the signs and symptoms and extent of the pathology and the ability to recognize the indications or contra-indications for certain special forms of treatment. For example, a patient with active tuberculosis in the lungs and larynx who takes sun treatment or goes to the physician's office for ultra violet ray exposures or throat treatments has a very poor chance for recovery. On the other hand, failure to collapse a lung showing rapid invasion with cavity formation when the contralateral lung is in good or fair con-

dition may change the prognosis from favorable to unfavorable. The patient is depressed and apprehensive and in a receptive mood and it rests with the physician to give him the proper attitude toward the disease. He can help him conserve his finances by discouraging "selling out and going West." The keynote to climate is wisdom. If hospitalization can not be accepted he can be impressed with the importance of rest at home and he can be given the assurance that tuberculosis is curable.

Last, but not least, is the character of the patient. It requires character to forego business, friends and pleasures, and adopt the rather dull routine of rest in bed and continue it persistently and consistently. It seems that the curability of a patient is in direct proportion to his intelligence. The average individual makes about the same success at *chasing the cure* that he did in private life. To succeed at getting well and staying well he must study the disease from observation and from books written for the laity. He must learn that an important symptom which guides his activities is *fatigue* and he must learn to live within his limitations.

The prognosis is invariably better if he can have a period of hospitalization where he can gain a general knowledge of the disease and learn the meaning of acquiescence, cooperation and adaptability.

NOTE—I have not included bibliography; it is very extensive, and I have consulted it frequently.

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## TUBERCULOSIS OF THE KIDNEY\*

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### *Medical Treatment—*

Tuberculosis of the kidney is relatively rare in this section of the country. During the last ten years there have been very few cases in the University and St. Anthony's Hospital, and yet observers elsewhere seem to have quite a number of these cases. We see as much pulmonary T. B. in proportion, but for some reason, genito-urinary T. B. is infrequent.

To have a better understanding of this disease we must consider the pathology. As you know, the kidney is infected always secondary to tuberculosis elsewhere in the body and renal involvement

\*Read before the Section on Neurology, Pathology and Bacteriology, Annual Meeting of Oklahoma State Medical Association, Tulsa, May, 1928.

takes place by the hematogenous route in most cases, by direct extension from surrounding tissues occasionally, and by the lymphatics very rarely, due to the fact that the lymph flows away from the kidney rather than toward it.

The organism being practically always blood borne, lodge in the kidneys at a place where the blood pressure is the least, which is near the cortex and near the upper pole. Here the same reaction takes place that occurs any time *T. B.* enters the body. Nature throws up a wall of connective tissue around the organisms trying to wall them off. That she is successful in some cases is shown by the healing areas found in persons who die of other causes, and the lesions are found post-mortem. If the disease overcomes the defending barrier, caseation takes place. From the location of the lesion in the kidney, the symptomatology develops. If the lesion is near the cortical layer, rupture occurs into the perirenal tissues. This may or may not cause symptoms. If near the pelvis, necrosis with rupture will cause a sudden shower of pus in the urine, accompanied by blood in about 25 per cent of the cases. If undetected or untreated, infection of the entire pelvis may take place by direct extension, causing an obliteration of the ureter with resulting soft or putty-like kidney. Or, if in the parenchyma, a gradual involvement of all the pyramids may take place causing the same condition.

The symptoms usually referable to *T. B.* kidney are those of cystitis, which is always secondary, but is usually the symptoms that cause the patient to consult his physician.

As this paper deals entirely with medical treatment, we must stay within our subject, but there is one point in diagnosis that should be stressed — namely, acid pyuria, without the amoniacal odor, must always be investigated with reference to *T. B.* This is one of the old points in diagnosis and yet the average physician must have his attention attracted forcefully to it or he will overlook it. For it is the family physician who sees these cases early, not the urologist nor the physiotherapist.

The treatment of *T. B.* of the kidney is two-fold, namely, medical and surgical, and neither can be separated from the other. All unilateral involvements should be operated early, removing the kidney, but in addition to this, the patient must

have careful medical supervision until he is back to normal. In bilateral disease, the treatment is always medical, and it makes no difference how far advanced these cases are not ever considered hopeless. It is true that bilateral involvement of the kidneys is far more serious than bilateral pulmonary involvement, but who of us is so expert on prognosis that he can tell which will survive?

As with tuberculosis elsewhere, the first essential is to treat the patient and the pathology will improve in a majority of instances. How familiar you are with the fundamental treatment: Rest! Of all therapeutic measures, it is by far the most indispensable. Before operation as a preliminary step, it has no equal. Rest in bed, lessening the metabolism, slowing the circulation, decreasing the amount of blood forced through the kidney, lessening toxemia and prevention of spread of the disease—these things are accomplished. After operation or in bilateral cases, from the onset rest must be continued until the patient is temperature free for a month. Then graduated exercise with modified rest plan, depending upon the individual case, until recovery has taken place. The patient also must be free from mental or financial worries. The nutrition of the patient must be kept at the highest point. His diet must consist of good wholesome food, well cooked and served in an appetizing way. Three good meals a day of balanced diet, rather than the old treatment of forced feeding on sweet milk and raw eggs. Especially is diet important in renal *T. B.* because forced feedings are not as easily tolerated as it would be in other forms of *T. B.* Fresh air is important—why? Because usually the renal involvement is secondary to *T. B.* of the lungs, and also it promotes the general vigor and healthfulness of the patient.

There is very little place for drugs in this form of the disease. Urinary antiseptics are not tolerated, useless, and sometimes detrimental. Water, freely taken is the drug par excellence. When the cystitis is severe in unoperated cases, it has to be relieved at times by anodynes or codeine.

In all cases specific therapy is indicated. This is given in form of bacilli emulsions or old tuberculins. It is best to start with very small doses, usually .000,000,1 cc. to .000,001 cc. and continue at intervals of three to four days, increasing the dosage gradually until a reaction occurs. These

reactions may be focal or general. If there is a general reaction with fever, malaise, anorexia, it is usually best to wait a week and then begin with half of the reaction dose, and ascend very cautiously. The best results are obtained from the maximum dose that stays just below the reaction point. This treatment must be maintained for several months.

In addition to specific therapy in recent years, light treatment has been used advantageously. This is applicable to all forms of T. B. except pulmonary. Sunlight, if administered properly, is a very useful adjunct. But the dosage of light must be very small at first, gradually ascending as the patient becomes more accustomed to it. A very good way to institute light therapy is to expose from the feet to the knees for five minutes the first day, from the knees to the hips five minutes the second day, and knees down, ten minutes, etc., until the body is thoroughly exposed for one hour, both front and back. If febrile reactions occur, the amount of exposure must be reduced and gradually built up again. Ultra violet light may be used in lieu of sun treatment.

In closing, we wish to say that it is always the patient to be treated; that usually there is T. B. present elsewhere in the body which must be cared for; and that in the problem of treatment the medical management is of the greatest importance.

#### THE TREATMENT OF PULMONARY TUBERCULOSIS WITH SPECIAL REFERENCE TO SURGICAL COLLAPSE\*

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In all discussions of the tuberculosis problem it has been customary to place the chief emphasis upon diagnosis, especially early diagnosis. This practice is justified by two main reasons: (1) an early diagnosis gives the best chance for recovery; (2) an early diagnosis in a case which responds to treatment materially lessens the danger to others.

Under present methods of treatment these rules still hold and should be religiously applied, but in the process of therapeutic evolution, a ray of light has penetrated the age long darkness which enveloped the

couch of the advanced consumptive, even the bedridden cases' "with coughs decayed" are entitled to an exhaustive study with a view of determining whether or not they may be benefited by the application of collapse therapy in some one of its forms. In many cases such a study calls for long continued observation, preferably in a sanatorium where frequent examinations may be conducted, and "fine discrimination employed with reference to the relative condition of the two lungs, the character and comparative age of lesions, degree of activity, and so forth."

The hope that such a study offers, makes institutional life acceptable to these otherwise hopeless cases, and their removal from the home greatly reduces the danger to other members of the family. In the average case, whether treated in the home or sanatorium, we still rely upon the established routine measures: rest, food and fresh air, with emphasis upon rest. This sounds simple, but there are many important factors, for some cases—even determining factors, which cannot be discussed in the time allotted for this paper. Suffice it to say that the progress of the case from week to week should determine the treatment, with necessary variations to meet individual needs.

Intelligent direction of a case requires a close study of symptoms, and a careful interpretation of physical signs. With these facts in mind it is evident that the sanatorium plan supplies many advantages which are not to be had in the home, and finally, the education of the patient which is so essential, can hardly be accomplished outside the sanatorium.

In the course of time patients who do not respond to these routine measures, even minimal and moderately advanced cases, must come under consideration with reference to artificial pneumothorax or collapse by means of the introduction of air in the pleural space. In well chosen cases, this method of treatment restores earning capacity in about 35 per cent and leads to improvement in an additional 35 per cent. Indications, contraindications, and methods of procedure, cannot be discussed for want of space. In a certain number of cases this method cannot be successfully employed because of pleural adhesions. In spite of such failure, the indications are still clearly in favor of collapse, and it is in just such cases as these that extra-pleural thoracoplasty skillfully employed in the course of well managed

\*Read before the Section on Neurology, Pathology and Bacteriology, Annual Meeting of Oklahoma State Medical Association, Tulsa, May, 1928.

cases, may offer results comparable to those secured by the successful employment of artificial pneumothorax. Dr. Horace Reed has wisely said that thoracoplasty is only a coincidence in the course of treatment, and should be done only after consultation with the phthisistherapist who has observed the case for months, and who will have the responsibility of continuing to direct the care for many months after the operation.

The following pictures, with accompanying case reports, have been selected as fairly representative of the results obtained by artificial pneumothorax and thoracoplasty. All are sanatorium cases. Thoracoplasty cases were transferred to a general hospital for operation, and returned to the sanatorium within two to four weeks after operation.



FIGURE NO. 1.

This represents a very common type. Advanced chronic ulcerative pulmonary tuberculosis with a large cavity in the upper lobe of the left lung. The cavity is held open by pleural adhesions and dense cavity walls. The lung had been partially collapsed for more than a year when the first picture was taken. It is possible to see the outline of both upper and lower lobes partially collapsed, the upper extending like a tennis racquet to include the large cavity. More frequent fillings with gradually increasing pressure soon obliterated the cavity as may be seen by inspection of the second picture taken more than eighteen months later. This patient now has an interval of about six weeks between fillings and has been working for the past three years. In this case artificial pneumothorax was employed as a last resort after two years of progressive trouble culminating in cavity formation and profuse pulmonary hemorrhages.



FIGURE NO. 2.

A young woman who developed high fever with cough and expectoration. In a few weeks it was possible to demonstrate a cavity in the upper lobe of the right lung and tubercle bacilli were found in the sputum. When she entered the sanatorium the cavity was shown by X-ray as may be seen in the first film. There was also evidence of trouble about the root of the left lung. After a few weeks' observation artificial pneumothorax was advised. Six months later, as may be seen by inspection of the second film, the cavity was completely closed, cough and sputum had practically disappeared and no tubercle bacilli were found. She has been at home with her family for more than a year, but comes for fillings at regular intervals.



FIGURE NO. 3.

This is a case of a young woman who had had the right lung collapsed two years before she entered the Farm Sanatorium. Upon admission examination revealed a partially collapsed right lung in fairly good condition. The upper lobe of left lung showed moderately advanced trouble which seemed to be quiescent. Since she had to work we permitted her to do part time duty as a practical nurse. An attack of "flu" flared the lesion in the left lung causing progressive trouble with cavity formation. The right lung was permitted to expand to some extent and the left one

compressed. Cavities may be seen in the upper lobe of the partially collapsed left lung. This is a beautiful example of bilateral pneumothorax. A more recent picture shows the left lung more completely collapsed with obliteration of the cavities and the right almost fully expanded. The patient is again working part time. If the right lung remains clear under the restored function and the left can be kept in a state of collapse for an indefinite period of time there may be a complete restoration of health.



FIGURE NO. 4.

Represents a case of advanced bilateral pulmonary tuberculosis in a young man who came to the Cottage Sanatorium in 1923. This picture was made after he had been under treatment about three years. The right lung has healed and the left shows considerable infiltration in the uncollapsed portion of the upper lobe. There is a small pneumothorax area immediately above the fluid level which is to be seen on the left at about the third costal cartilage. This is due to a tuberculous empyema which has been carried for a number of years.

Soon after this young man entered the sanatorium we were contemplating the advisability of attempting artificial pneumothorax on the left side. The case was considered a grave one because of so advanced trouble in both lungs. However,

the disease in the left seemed to be more progressive and more active. While we were still debating the advisability of collapse therapy he had a hard coughing spell and developed a spontaneous pneumothorax on the left with sudden collapse of the left lung and spilling of infectious material into the pleural sac, causing all the symptoms of profound shock with marked dyspnea due to the rapid production of fluid and high air pressure as a result of the valve-like rent which permitted the constant pumping of air into the pleural space. After a stormy period, during which we had to relieve the pressure by frequent withdrawals of air and fluid he settled down to the usual course of an artificial pneumothorax case. The toxemia subsided, the lungs healed and after a number of months he returned to his work. After working about a year, while on one of his trips to Oklahoma City for a filling, he was in a wreck and his back slightly injured. He continued to work without symptoms of toxemia, and consequently gave little thought to the injury in spite of the fact he occasionally had pain in his back.

Several months later a lump appeared in the right inguinal region. Examination revealed a cold abscess. An X-ray of the spine showed partial destruction of the fifth lumbar vertebra, with deformity as



FIGURE NO. 5.

shown in the first film in (Fig. 5). He was readmitted to the sanatorium and placed on a hard mattress where he remained for eight months. Soon after he was put to bed there was a spontaneous rupture of the cold abscess with free discharge of caseous material for several weeks followed by complete and permanent closure of the sinus. At the end of eight months he was fitted with a light brace and placed on exercise. After a few weeks' observation on exercise he was returned to his former position of time keeper with

an oil company and has been drawing full salary for more than a year. In spite of all he has gone through he is now apparently well.



FIGURE NO. 6.

This young man had advanced tuberculosis involving the left lung with cavity in the upper lobe. The right lung was relatively free from disease. The sputum, two to four ounces daily, was loaded with tubercle bacilli. After remaining in the Farm Sanatorium one year without improvement he was advised to have the left lung collapsed. This could not be accomplished by means of artificial pneumothorax because the pleural space was obliterated by adhesions. Thoracoplasty was recommended and by means of a two-stage operation performed by Dr. Horace Reed eleven ribs were removed. This permitted sufficient collapse of the lung to close the cavity and reduce cough and sputum to a minimum in a very short time. The sputum soon became negative and he was able to work part time for six months when he suddenly developed appendicitis. An operation eighteen hours after onset revealed a gangrenous appendix requiring drainage. This led to a temporary flare of the left lung with return of cough, sputum and tubercle bacilli. The sputum was positive only about six weeks. It has been a year since the appendectomy, the patient has been working six months and has practically full earning capacity.

In closing may I urge you to be faithful in the prompt application of the long established routine methods of treatment, and quick to accept the more recent methods which are so full of promise for many otherwise hopeless cases.

## SURGICAL TREATMENT OF TUBERCULOSIS OF THE KIDNEY\*

LEROY LONG, M.D., F.A.C.S.  
OKLAHOMA CITY

But one surgical procedure need be considered in connection with tuberculosis of the kidney, and that is the removal of the diseased kidney.

Nephrectomy ought not to be done when there is acute miliary tuberculosis, bilateral kidney infections, or when the patient is not at least a reasonable operative risk.

In acute miliary tuberculosis, the kidney pathology is but a part of general and widely disseminated pathology. The removal of the kidney under such circumstances would be unreasonable and disastrous.

There may be situations in which a kidney in a condition of nephrosis with mixed infection should be removed even though there is evidence of beginning tuberculosis in the opposite kidney, the functional efficiency of which has not been materially reduced. It is a nice point that must receive careful, earnest consideration in the case of the individual patient, and it does not alter the rule that a nephrectomy should be done only when there is but one diseased kidney.

Even though there is no evidence of tuberculosis of the opposite kidney, a nephrectomy should not be undertaken without having first ascertained as nearly as possible the resisting power of the individual. This is particularly true in those cases in which there is remaining function in the diseased kidney. In such a case, the function of the opposite kidney should be carefully investigated in order to try to determine whether or not it will properly take over the additional load after the diseased kidney is removed.

I believe that it is fairly uniformly considered that tuberculosis of the kidney usually begins as a blood-borne infection. The bacilli are deposited in the kidney tissue external to the pelvis, and a focus may exist for a variable length of time without symptoms that cause annoyance enough to send the patient for advice.

The first symptoms leading to justifiable nephrectomy are not always the same. In one case there is dull pain in the kid-

\*Read before the Section on Neurology, Pathology and Bacteriology, Annual Meeting of Oklahoma State Medical Association, Tulsa, May, 1928.

1. Dryden.  
2. Moorman, Dr. L. J., Tuberculosis in Medical Curricula, Southern Medical Journal, February, 1928.

ney area, without urinary findings of significance. That is probably due to the direction taken by the pathological process, the advancement being toward the periphery of the kidney. Again, an early symptom may be turbid urine, in which case there has been a communication with the pelvis, either directly or by way of a breach due to disintegration of urinary tubules. Soon after this takes place, there is *thamuria*. Perhaps the most common early complaints are *thamuria* and turbid urine. If, in such a case, there are pus cells without pyogenic organisms, and in addition there are acid-fast bacilli, it is reasonable to conclude that the patient has a tuberculosis of the urinary tract; and since tuberculosis of the urinary tract always develops in one kidney, it is fair to conclude that it is a kidney tuberculosis. Catheterization of the ureters will then determine which kidney is involved, and if one kidney only, it ought to be removed.

In but a comparatively few patients with surgical kidneys due to tuberculosis is it possible to palpate the kidney. This is particularly true in the early stage of the disease—the stage in which it would manifestly be very desirable to make the diagnosis. The existence of a tumor that is easily felt generally means that the condition is late and that there is obstruction to the egress of material from the kidney pelvis.

Thickening of the first part of the ureter with narrowing of its lumen is a familiar picture, and on account of it there may be temporary obstruction from time to time so that nothing for the time being enters the bladder from the diseased kidney. In such a case, the examination of the urine may be misleading. A cystoscopic examination to determine the character of the ureteral openings, and whether urine is coming from both of them, will help to clear up the situation.

While tuberculosis of the kidney is not very common, it is my belief that it is frequently overlooked. I am convinced that a good many of the cases of *pyonephrosis* were primarily tuberculosis of the kidney. Such errors could be obviated by repeated examination of the urine or guinea pig inoculation.

Beer and others recommend the removal of the entire ureter with the kidney, such an operation necessitating multiple incisions and rather extensive and tedious dissection. I do not believe that such a

procedure is necessary, provided the ureter is divided with aseptic precautions and brought through the operative wound so that it does not communicate with the perirenal space.

## LARYNGITIS IN THE TUBERCULOUS

FRANK R. VIEREGG, M.D.  
CLINTON

This short paper is not intended as a scientific treatise on laryngeal tuberculosis because it is not based on autopsy findings or on any microscopical biopsy findings. It is based on the impressions I gained in doing the every day work of caring for the eye, ear, nose and throat conditions of the patients at the Southwest State Tubercular Sanatorium located at Clinton, during the seven or eight months that I was connected with that institution. It is intended to deal with the general laryngeal conditions that tubercular patients seem so prone to have.

The majority that enter that institution go there as a last resort and are in the advanced stages of pulmonary T. B. So to a large measure the patients that one sees there are not a good sample of what one sees in doing the regular office practice connected with eye, ear, nose and throat work. During the years that I did eye, ear, nose and throat exclusively, and before entering the sanatorium, I saw the average number of these one would see in a fairly large eye, ear, nose and throat practice. I must admit, however, that I got a rather exaggerated idea of the significance of laryngitis in tuberculous patients, for I thought at that time that whenever a tubercular patient develops laryngitis that he was doomed for a sudden demise. That is the impression I get from reading all the standard text books that I have read on this subject.

After having been with the institution for some months I found out that tubercular patients are very susceptible to laryngitis and its resultant hoarseness. The majority of these patients who developed this hoarseness do not have any demonstrable lesions that you could say are due to a localized tubercular process.

We all know that a tubercular patient who develops a tubercular ulcer on their larynx or elsewhere in that neighborhood

\*Read before the Section on Neurology, Pathology and Bacteriology, Annual Meeting of Oklahoma State Medical Association, Tulsa, May, 1928.

usually soon passes out of the picture—the average being around six months. In the type of condition I am talking about I do not believe that the laryngeal condition is any indication as to what the prognosis will be.

I have seen so many tubercular patients become hoarse who had so slight an involvement of the laryngeal apparatus that at first I thought it impossible that so slight an involvement of the larynx could cause so much a loss of the timbre of the voice. In some of these patients who had lost practically all of their voice and were trying to talk in whispers, on examination of their larynx I would find no ulceration at all and only the very slightest amount of swelling of the posterior end of one of the arytenoid cartilages. This swelling in these cases was very slight and was not accompanied by an appreciable amount of inflammation. What little inflammation there was, was usually limited to the immediate neighborhood of the swelling and had a dull, inactive sort of an appearance. In this type of case the swelling was usually unilateral and was found most often on the posterior end of the arytenoid cartilage. Still harder to locate however were the cases in which the swelling was limited to the region of the thyro-arytenoid joint. In this type of case however the first thing to attract one's attention was the fact that there was a limited movement of one of the arytenoid cartilages.

Most of these patients complained of little except hoarseness. This hoarseness frequently came on rather suddenly and rapidly got worse. If these patients would persist in the use of their voices. Their throat would tire and in some cases they would say that their throat would ache. Most of these patients had no pain on swallowing.

This condition is often very persistent and is quite annoying and unless the patient promptly puts their voice to rest and institutes other remedial measures, to be discussed later on, the hoarseness can become a chronic condition and remain even after the tubercular condition in the chest has apparently healed.

I have observed these patients over a period of six to eight months and I have never seen a one of these cases develop into a true tubercular ulcer.

The characteristic tubercular ulcer is found most often on the posterior end of the arytenoid cartilages. The base of the

ulcer is of a dirty yellow color, with the so-called "moth eaten edges." Surrounding these edges is an area of inflammation which is not very intense and has a rather indolent appearance. These ulcers vary in size from the merest dots to involving practically the whole of the larynx. One patient that I have in mind had the entire epiglottis eroded and the surface of both arytenoid cartilages were ulcerated. I often wondered how this man was able to eat at all and why he did not choke on every swallow of water or food that he took. He apparently got by in pretty fair shape. Of course it all was painful to him but he complained less than a great many did who had a much smaller ulcer that was protected by the interposition of the epiglottis between the ulcer and the food as it passed downward and backward into his oesophagus.

The type of nonulcerated laryngitis that I described above is sometimes found in patients that do not have any tuberculosis at all. I have in mind one patient who has no tuberculosis and to his knowledge never has had tuberculosis, who had exactly the same type of laryngeal trouble that I described above. This man by occupation is an auctioneer and an insurance salesman. If there is any combination of businesses that would make a man an incessant talker it seems to me that that would be it. This fellow had had a series of mishaps or misfortunes or whatever you want to call it that would discourage most of us. Some few years ago he had an operation on his mastoid and was unfortunate enough to have the facial nerve severed. A few years later he went to Mayos where they attempted to make an anastomosis with the spinal accessory, and this was only partially successful. A few years later, after getting back to a heavy schedule of sales, he practically lost his voice and came to me talking in a whisper. I found that he had only about one-fourth of a normal air space in either nasal chamber, due to a highly deflected septum which practically closed both nostrils. In his nose, nasopharynx and throat there was a brilliant inflammation that extended from the end of his nose to the body of the larynx. The larynx did not show any singers' nodules that one would naturally expect to find. The inflammation that was so fiery in his nose and throat did extend to the epiglottis, but the arytenoid cartilages were grayish in color and slightly edematous and the movement of either of them was somewhat restricted. I had this man's chest thor-

oughly examined for any possible trouble, but it was reported negative. I did a submucous resection and in the course of a short while practically all of the inflammation disappeared from his nose and throat. He started back to his old work of crying sales and the old hoarseness returned after he would do any amount of work. On examining his larynx I found that the arytenoid cartilages still had that swollen, grayish appearance. I suggested that he take a few treatments that I am going to describe, for the treatment of this form of laryngitis, and his voice rapidly cleared. He was so encouraged by this that he took quite a few of the treatments and he now tells me that he can give his voice the old-time ring and the hoarseness does not return unless he catches a cold and that is now infrequent.

The treatment of this form of laryngitis and the treatment of true tuberculous laryngitis is very similar to the treatment of T. B. anywhere—namely rest. These patients with the laryngeal involvement should not only give their whole system a rest, but should also give their throat a rest by going on complete silence, which means no whispering either.

For the relief of the pain that these patients suffer there are several things that can be done. Silence which means rest to the larynx, will give a certain small percentage of the patients with true tubercular ulcers sufficient relief to eat. Others with greater involvement will get relief from the topical application of 20 per cent solution of menthol and 10 per cent phenol in glycerin. This applied just prior to meal time permits a great many of these patients to eat in comfort. In still others it takes the insufflation of orthoform powder to get sufficient relief to eat. Orthoform powder is expensive and there are not a great many people who can stand this expense. None of the above mentioned means however have any curative value at all that I was able to detect.

Sunlight reflected into the larynx of these patients by means of this system of metal mirrors gives these patients a sense of warmth, relaxation, and relief from pain that is away beyond what one would naturally expect from such a simple measure. And to see these swellings and areas of inflammation, and even tubercular ulcers themselves grow smaller under the influence of this light one can not doubt that they have some curative action on true tubercular ulcers. The patients them-

selves say that they have a sense of relief that often lasts throughout the day. It enables them to eat with much more ease and they are most appreciative for all it does for them. It is amusing the way these patients fuss about cloudy weather that keeps them from getting their routine treatments.

Most of these patients, depending upon the degree of their intelligence, soon learn to use these mirrors themselves. It is surprising with what degree of accuracy they can manipulate their tongue and the mirrors to throw the light on the part of their larynx that needs the stimulation most.

So far as my own experience goes this is as far as I have gone in this line of work. Some of the larger institutions in New York go farther I believe. One man by the name of Schugt, reporting in the December, 1927, issue of the Archives of Oto-Laryngology, advocates resection of a portion of the superior laryngeal nerve to produce anaesthesia. He also advocates the injection of the inferior laryngeal nerve with alcohol to produce a temporary paralysis of the larynx. I had considered this procedure in a great many of the patients, but the patients I thought bad enough to warrant either of these procedures were so far gone in a general way that I always felt that these measures would soon prove an unnecessary operation to impose on these severely sick patients. So for that reason I have had no experience with either procedure. From a purely theoretical and anatomical consideration it would seem that either one of them would be ideal. But if in any of these allied conditions you men see fit to give this simple little method a trial I believe that you will be more than paid for your efforts.

In conclusion I might summarize as follows:

1. Tubercular patients are peculiarly susceptible to laryngeal involvements.
2. A large percentage of the laryngeal conditions found in tubercular patients are not due to localized tubercular processes.
3. Non-tuberculous laryngeal conditions found in tuberculous patients has no bearing on the prognosis.
4. Reflected sunlight in these conditions has a curative as well as palliative effect on both the tubercular and non-tubercular laryngeal conditions found in tubercular patients.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council

Vol. XXI DECEMBER, 1928 No. 12

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Entered at the Post Office at Muskogee, Oklahoma,  
as second-class mail matter, July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Barnes Building, Muskogee, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

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Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

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PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

### EDITORIAL

#### TO OUR MEMBERSHIP

In a few days each County Secretary will receive advice and plans upon the collection and remittance of dues for 1929. These officers are urged to make these and report them as rapidly as possible in order to get them out of the way and to give time to correct inevitable errors which occur.

Our members will be of great aid to their officers by meeting them half way in this matter. If you wish to help your Secretary, who receives no pay for his services, call him up, ask him the amount of your dues and mail him a check.

Your Secretary feels gratification in advising you that your business affairs are in splendid condition and we feel that the cooperation of our membership will greatly aid in keeping them in this satisfactory state.

### TUBERCULOSIS

In this month's Journal there appears much concerning tuberculosis which will bear a great deal of study. This is so large a subject, and has had so much discussion and scientific work, which has not shown results in such a short period of time. The incidence and mortality of tuberculosis has decreased materially in a comparatively few years, which brings about a tale not yet unfolded. There is at the present time, much discussion as to the cause of such a decrease, and as it is not yet decided, satisfactorily, we may say that the factors of hygiene covering food, crowded home conditions, ignorance of health matters, and the decrease in such conditions, together with a decrease in epidemics of debilitating diseases, have had much to do with this change. Other great factors would seem to be the influences of private and public health agencies, and their greater activity, together with a great increase in the number of sanatoria which have greatly benefitted the population by educating them, both before and during the course of the disease. Early diagnosis, however, seems still to be of prime importance, and therefore it is found that much work is being done during the pre-school age in an attempt to avoid close contact. During the following years the same attempt is made, together with a continual survey of those who have been contact cases, during which all known efforts are necessary to bring about a diagnosis, for this is as much a problem as ever, and must be studied from the standpoint of contact, symptoms, repeated physical, sputum, and the X-ray examinations. The treatment has undoubtedly had much to do with reducing the morbidity, and mortality of tuberculosis, and while many cases will do as well, and some better, at home, the majority probably will be better off in a sanatorium. This result is due to both the family and the patient, as the family is thereby removed from contact, and the patient is in close contact with those who understand the disease, and are able to educate the patient so that when he or she leaves the sanatorium, they have a com-

plete knowledge of how to take care of themselves. At the present time there is more thought being given to preventoria for those who have not acquired the disease, and to institutions such as farms and light factory type of work for those who are not able to immediately go into full time labor, and yet do not find it necessary to remain at home or in a sanatorium. The former will undoubtedly prevent very many cases occurring, and the latter will prevent cases of recurrence. While we feel that children especially should be protected, yet there has recently been brought to our attention that there is much suffering of this disease among girls of fifteen and twenty years of age. This is now being carefully studied with a hope of a remedy being found. Treatment of tuberculosis has advanced along with the knowledge of biology and pathology of the disease, and we find as a basic factor that rest is essential. The forms of treatment advocated today such as pneumatic jackets, sand bags, pneumothorax, and thoracoplasty, are but the means of going further with the rest in bed which nature prescribes. Drugs, vaccine and so called serum treatment seem to have a limited value and any new proposition of that kind should be proven by some of our more thoroughly competent research workers and not be taken up in treatment until so proven. Because, while we do not want to be the first to lay the old aside, neither should we be the first to take up with the new.

HORACE T. PRICE,

*Member, Committee on Tuberculosis.*

#### THE MEDICAL RESERVE, NOW A PROBLEM FOR THE YOUNG PROFESSIONAL MEN.

The World War ended more than ten years ago. It has been approximately fourteen years since Mr. Lloyd George, Premier of Great Britain, in summing up the plight of various British services stated that of all of them the medical profession was more nearly ready to function than any other. We all know now how lamentably short this "near prepared" service was found under the great pressure it had to face. None of us have forgotten much of our unpreparedness. After the war, throughout the United States, in every Corps Area, from Corps Area headquarters, was begun organization, enlistment and training of the Organized Medical Reserves. The 8th Corp Area, Col. H. H. Rutherford, Ft. Sam Houston, command-

ing officer, has seen great advancement in this work and many of the leading medical men in the Area take great pride in the perfection of the Reserves in peace time. As to number the allotment of Reservists in Oklahoma is a matter of pride to the informed of the profession.

Recently it was the writer's privilege to attend a short course in the Commanding Officers' class at Ft. Sam Houston, and he is fairly well aware of the situation with reference to the ages of many Reserve Officers, assigned and otherwise. Most of these Reserve Officers are men who saw service more than a decade ago, many of them being at the age where soon they should only be called upon to render certain types of work and that only remotely connected with combat troops. These men of course are growing older and their place must be filled from the ranks of younger men who have no conception whatever of the duties which must be fulfilled by Medical Officers.

It seems to the writer that it should be now the aim and effort of every medical Reserve Officer to bring into training that element of the medical profession which saw no service in the late war. It seems more than likely that the brunt of the next war involving the United States will fall upon medical men of this class.

Much has been said and the opinion is crystalizing throughout the country that in the next war all men, regardless of age and fitness will be called into some service, if the individual can possibly be used. This will probably be the rule, in which case, it will be much better for these younger medical men to take their training annually now, spreading it over a term of years, making it a recreational event rather than to be pressed into service at some future time in a state of unpreparedness.

#### *Editorial Notes — Personal and General*

DR. J. G. BRECO, Ada, is reported seriously ill at Oklahoma City.

DR. HUGH SCOTT, Chicago, spent a few days with friends in Muskogee in November.

DR. and Mrs. J. A. Burnett, Duncan, visited South Texas points in November. Dr. Burnett had a successful hunting trip.

The next annual CLINICAL CONGRESS of the Americal College of Surgeons will be held in Chicago, October 14 to 18, 1929.

OSAGE COUNTY elected the following officers for 1929: J. G. Shoun, President; C. H. Guild, Vice President; M. E. Rust, Secretary-Treasurer.

OKLAHOMA CITY ACADEMY OF MEDICINE elected President, Dr. L. M. Westfall; Secretary, Dr. T. G. Wails; Member of the Executive Board, Dr. L. J. Starry.

DR. FRANK MCGREGOR, Mangum, was elected president of the State Hospital Association at the annual convention of the organization in Oklahoma City.

TULSA COUNTY MEDICAL SOCIETY elected the following officers for 1929: C. T. Hendershot, President; J. F. Gorrell, President-elect; Henry S. Browne, Vice President; Edna May Sippel, Secretary-Treasurer.

OKLAHOMA SOCIETY For Crippled Children reports for the year 3,735 patients were examined, 1,628 were hospitalized. Subscriptions and general receipts totaled \$34,165.32 of which \$8,811.81 was used for current expenses, the remainder for items designated by the subscriptions.

DURANT HOSPITAL STAFF was host to members of the Bryan County Medical Society November 27th, the occasion for a turkey dinner. Dr. D. Armstrong, Durant, read a paper on "Diseases of the Respiratory Tract." Dr. Chas F. Moore, Durant, read one on "Complications of Upper Respiratory Diseases."

STEPHENS COUNTY MEDICAL SOCIETY, at their November meeting, were guests of Drs. W. S. Ivy and J. L. Patterson. Dr. B. A. Hayes, Oklahoma City, delivered an address on "Hypertrophy of the Prostate." Drs. Geo. W. Stiles and C. H. Fauks representing the Federal Government on "Bovine Tuberculosis," also other infectious diseases among stock communicable to man.

DR. LEA A. RILEY, Oklahoma City, was selected by the University of Kansas, Extension Department, to represent Dr. McKinley of the University of Minnesota, who was absent on account of illness from the Kansas City meeting. Dr. Riely's work covered Diagnosis and Internal Medicine and was given during the Thanksgiving week at Kansas City. It is very gratifying to see Oklahoma Medical School branching out in this very deserved manner.

SOUTHWESTERN OKLAHOMA MEDICAL ASSOCIATION met at the Jefferson Hotel, Atoka, Wednesday, December 12, 1928. The program for the meeting was as follows: Invocation, Rev. J. A. Parks, Pastor Methodist Church, Atoka; Welcome Address, Dr. J. S. Fulton, Atoka; Response to Welcome Address, Dr. L. S. Willour, McAlester; President's Address, Dr. T. H. McCauley, McAlester; Some Case Reports, Dr. L. C. Kuyrkendall, McAlester; Surgical Attention in Emergency Cases, Dr. H. Lee Farris, Tulsa; Diagnosis of Pulmonary Tuberculosis, Dr. J. T. Wharton, Durant; Heart Failure, Dr. A. B. Chase, Oklahoma City; Treatment of the Neuroses, Dr. M. S. Gregory, Oklahoma City.

OTTAWA COUNTY MEDICAL SOCIETY announces its Fifth Annual Game Dinner for December 14th, at Hotel Main, Miami. Arrangements were under charge of Drs. Burleigh DeTar, president, J. W. Craig, secretary, and a committee composed of Drs. G. Pinnell, F. L. Wormington and F. P. Helm. The program was one of artistic,

literary and poetic attainment and accomplishment, invoking all members to get together, lay aside worries and misunderstandings and start the New Year with a clean bill of health. Its sentiments are those which may well be adopted by all county societies and members. Aside from an elaborate banquet, the literary and scientific offerings were of unusually high order and presented by experts in their respective fields. Apropos and fitting, in fact, it might have better preceded the banquet, was a paper by Dr. Geo. E. Kappenberger, Kansas City, on "Dietary Considerations in Certain Gastrointestinal Conditions," an address, "Lives of the Hunted" by Senator Gid Graham, Nowata, who has much to do with game conservation in Oklahoma. The subject, "Angling—A Sovereign Remedy for Tired Nerves," was offered by Honorable Thomas A. Latta, for many years the potent, pungent and powerful editorial writer for the Tulsa World, now editor of Latta's Fortnightly Review. "Some Triumphs of Modern Surgery," was the subject of a paper by Dr. Davy L. Garret, Tulsa surgeon.

#### DOCTOR ALFRED W. COLEMAN

Dr. A. W. Coleman, 72 years old, died suddenly November 16th, at his home in Davenport.

Dr. Coleman was born at Decatur, Ill., October 19th, 1856. He obtained his preliminary education at Decatur public school. He graduated from Denver Medical College in 1888.

Dr. Coleman is survived by his wife and two brothers and a sister. Funeral services were held November 17th at the Christian Church under the auspices of Davenport A. F. and A. M. lodge. Burial was in the old home cemetery at Denver, Colorado.

#### DOCTOR WALTER PHILIPS ROBINSON

Dr. W. P. Robinson, practicing at Sapulpa since 1918, died December 2nd, at the Lakeview Hospital, Danville, Illinois.

Dr. Robinson was born in Indiana and was educated in Louisville, Kentucky, graduating from the University of Louisville in 1905. He lived for a number of years at Boonville, Indiana, before going to camp as a surgeon during the world war.

Dr. Robinson was a member of the Rotary Club, a member of the Masonic lodge and the Elks Club. Burial was in Sapulpa. Dr. Robinson is survived by his wife and one son.

#### DOCTOR ZACHARIAH G. TAYLOR

Dr. Z. G. Taylor, Mounds, 77 years old, died December 2nd, after a long illness.

Dr. Taylor was born in Adair County, Kentucky, December 2nd, 1851. He has practiced medicine for 46 years, 23 years of this time being spent in Mounds. He is survived by his wife and two daughters. Funeral services were conducted December 3rd, by Rev. Tom F. Shaw, pastor of the Second Christian Church, Tulsa, and burial was in Mounds cemetery.

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.  
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### The American College of Surgeons.

The clinics in Boston at the 1928 meeting of the American College of Surgeons were of superior quality; especially were the orthopedic clinics exceptional in their instructiveness. Boston has more authorities in orthopedic surgery than any other city of its size and it is remarkable how these men cooperate in presenting their local surgical developments. Many of their clinics consisted of demonstrations of end results and no effort was made to hide the unfavorable results.

An especially interesting clinic was that held daily by the American Mutual Liability Company. Dr. Chas. Codman demonstrated his treatment of subacromial bursitis of the shoulder and his operation for suture of the subscapularis. He made the point that this muscle which covers the head of the humerus is more often torn than is generally thought and is the cause of permanent limitation of abduction of the shoulder following dislocations and fractures about this joint. Dr. Frederic Jay Cotton demonstrated some interesting cases of deformities following industrial fractures. He keeps fractures of the spine without paralysis, in bed for six weeks on a hyperextension frame. They may then be up in a cast or brace. In six months, exercise is allowed, and in nine months, ordinary labor is resumed. He does not favor spinal fusion operations on industrial cases.

Dr. Cotton is not enthusiastic about arthrodesis operations in fractures of the os calcis. He does believe, however, that fractures of the astragalus should be reduced immediately by open operation and reduction of fragments.

In the treatment of tubercular joints, Dr. Robert Osgood demonstrated a chart made from an abundance of records at the Massachusetts General Hospital in which the frequency of tubercular joints in children had lessened progressively and rapidly within the last few years, and expressed the opinion that this was due to strict milk inspection and early diagnosis by public health authorities.

Acute infantile paralysis is receiving a great deal of attention in Boston and a supply of convalescent serum is reported on hand by the Harvard Infantile Paralysis Commission. Dr. William Loyd Aycock gave a very instructive lecture at the Harvard Medical School upon this subject. If the diagnosis is made before paralysis occurs, the convalescent serum is very effective. He believes that the disease is present in childhood just as measles and other infectious diseases, but normal resistance become lowered and epidemics may follow.

Dr. Andrew MacAusland at the Carney Hospital held several very interesting clinics. Dr. MacAusland is very progressive and has accomplished some marvelous results in the construction of new joint.

We are grateful to Boston for its splendid teaching.

Talbot, J. A.: *The Treatment of Anterior Poliomyelitis*. Virginia M. Month., 1925, lii, 216.

In discussing the pathology of anterior poliomyelitis, the author emphasizes the general tox-

emia and the extreme primary paralysis from pressure. The condition has four stages: the stage of onset, a stationary period, the period of partial recovery, and the chronic stage.

The treatment varies according to the stage of the disease. In the acute stage, the patient should be placed at complete rest in order to protect the inflamed nerve cells from peripheral stimuli. For this purpose, the plaster bed or Bradford frame may be used.

The limbs should be immobilized to prevent contractures. Gentle massage should be given only after the acute tenderness has disappeared.

In the stage of convalescence, muscle training is indicated and massage should be continued. Weight-bearing may be allowed only with proper brace to prevent contractures and deformity from over-balance and muscle pull.

In the chronic stage, massage should be continued. It is in this period that the judicious use of apparatus is advisable and operations for stabilization and tendon transplantation may be indicated. Fatigue must be prevented.

In conclusion, the author cites instances of favorable results given by the Rosenow serum, but states that he has never used it.

Mitchell, J. I.: *The Residual Paralysis and Deformity of Anterior Poliomyelitis*. J. Bone and Joint Surg., 1925, vii, 619.

Anterior poliomyelitis is an infectious disease characterized by inflammation of the gray substance of the spinal cord and attended by motor paralysis and deformity.

The course of the condition may be divided into three stages: (1) the acute febrile stage occurring usually in infants or young children, (2) the stage of repair of the damaged cord and re-establishment of function during a period of months or years, and (3) the stage when improvement ceases and a permanent residual paralysis remains. The residual state of deformity may progress or become accentuated by growth.

The disease is of wide geographic distribution and often occurs in epidemics. New York and the New England states rank first as endemic foci.

Many problems pertaining to the pathological serological, bacteriological, and immunological study of the disease have been solved by animal experimentation. Flexner and Rosenow have shown by experiments that the infecting organism probably enter the body through the upper respiratory passages. Children whose tonsils have been removed are rarely affected during an epidemic of anterior poliomyelitis.

In the Mayo Clinic series of 350 patients, the disease occurred during the first three years of life in 44 per cent, but the ages range from 15 months to 59 years.

Trauma was given as the etiological factor in thirty-six cases. The prodromal symptoms were chiefly gastro-intestinal: loss of appetite, vomiting, constipation, and diarrhoea. Fever and pain were also prominent symptoms. In most cases, the paralysis appeared on the fourth day. In 37.5 per cent the initial involvement occurred in both legs.

Usually the patient does not seek aid until after the deformity has become well established. In the series of cases reviewed, the average duration of the paralysis is 8.4 years. The paralysis is usually more severe in the legs than in the arms, and certain muscles are affected more than others.

The anterior tibial muscle is most commonly paralyzed.

In the last stage of the disease, a limp was the the chief complaint of 44 per cent of the cases. The second most common complaint was deformity of the feet and legs. Talipes equinus and talipes valgus were the most common deformities. Scoliosis occurred in 31.4 per cent of the cases.

Marked improvement follow proper treatment early in the disease. The treatment usually consists in rest, the use of splints and brace, massage, the application of heat, and muscle training. In many cases, surgical treatment of the residual deformity is of great benefit. There are three types of operation: (1) those correcting deformities, (2) those stabilizing the limb as well as correcting deformities, and (3) those increasing the function of the limb.

### DERMATOLOGY AND RADIO-THERAPY

Edited by C. P. Bondurant, M.D.  
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#### Radiological or Operative Treatment of Cancer of the Uterus. J. Heyman, Actaradiol., 1927, viii, 363-409.

A sufficient number of cases have been submitted in various statistical reports concerning the treatment of cancer of the cervix to enable a comparison of the results of the two methods of treatment to be made with usual accuracy. Difficulties are met however in drawing these conclusions from such comparisons because of the fact that the results of operative treatment have been secured from an initial material, which was on the whole clinically far superior to that treated radiologically. Thus far the number of cases is still too small to permit any definite conclusions concerning the results in the treatment of operable cases of cancer of the cervix. In considering cancer of the cervix an endeavor has been made to collect all complete statistics from the world's literature pertaining to the end results of the extended operations. From this the highest average figures that can be taken as reasonably representative of the absolute in operation from statistics hitherto published is 20.2 per cent. The statistics from the Radiumhemmet include 500 cases of carcinoma of the cervix uteri treated radiologically in the first instance, and 41 not treated. The lowest figure for the absolute results in this group of cases is 20.7 per cent. In two-thirds of the operative statistics referred to the operable cases were 58.6 per cent or greater; in the group from the Radiumhemmet there were 26.6 per cent operable cases. With due consideration to the difference in initial material, it seems reasonable that the radiological treatment as practiced at the Radiumhemmet as regards end results in the treatment of cancer of the cervix is superior to the operative treatment. An accurate comparison cannot yet be made in the treatment of operable cases alone because the radiological statistics are yet too small. Figures so far available lend support to the theory that the operative treatment is to be preferred. The statistics of both the radiological and operative treatment of cancer of the uterine body are too small to furnish any comparison of much interest. Operative statistics show the absolute results to average 42.8 per cent of all the cases and 58.8 of the operable cases.

The statistics from Radiumhemmet include 46 cases with an absolute result from radiological treatment of 43.5 per cent, and among the cases classed as operable the per cent of recovery was 60.0. These figures seem to indicate that the same results can be attained with either the radiological or surgical treatment.

#### Carcinoma of the Cervix Uteri. Karl H. Martzloff, Bulletin of the Johns Hopkins Hospital. 40:188-191, March, 1927.

The following is taken from the summary of this bulletin. Primarily this study was intended to ascertain if possible the factors that influence an operative cure of a patient suffering with cancer of the cervix uteri provided she survived the immediate effects of the operation. Certain features are briefly indicated upon which a prognosis may be based: first, extension or metastases when found in either regional lymph nodes, the adnexa, bladder, rectum, or pericervical tissue are considered to render an ultimate operative cure impossible; second, extension of the cancer to the uterine body impairs the chance of an operative cure but does not obviate it in spinal-cell cancers. In transitional cell type this extension renders operation worthless. Generalizations on these points are hardly permissible; third, extension to the vagina in otherwise operable patients warrants an unfavorable prognosis. This complication is most serious in the transitional cell cancer and least serious in the adenocarcinoma; fourth, the duration of symptoms beyond eight months in the spinal and transitional cell cancers is sufficient to put the patient beyond the scope of operative cure; fifth, the degree of cervical involvement, provided no pericervical implication has occurred, is relatively unimportant in the spinal cell as well as in the adenocarcinoma. The transitional cell cancer involvement is an important role, so that of the cured patients those having one-third or less of the thickness of the cervix involved in cancer as compared with those having more extensive involvement are as two to one. Of patients with one-third of the cervix involved the operability incidence is 95 per cent and the cures obtained in this group are 57.8 per cent. It seems possible, on the basis of this study to render a prognosis provided the tissue removed is studied with sufficient care and the operation is performed by a trained surgeon.

#### Radiation Treatment of Malignancy of the Cervix by Radium Emanation. Ira I. Kaplan, Radiology, October, 1927, ix, 314-321.

At the Bellevue Hospital the following method of treating carcinoma of the cervix is used: first, the lesion is attacked locally to clear up infection, then the pelvis to block off the lymphatics and destroy the metastatic foci, and finally the local lesion. This is done with the idea of destroying the tumor and of administering sufficient doses in the proper time to give desired results. Before radiation is started the patient is treated from a nutritional and hygienic standpoint. The bowels are cleansed with enemas, douches with boric acid or 2 per cent glucose, and then followed by irrigation with 2 per cent methylene blue. A biopsy is then taken of the lesion. Deep X-ray therapy is used over the pelvis in all cases as follows: 200 kv., 4 ma., 30 to 50 cm., target distance, 0.5 mm. cu. and 1.0 mm. A1 filter, 9x12 or 15x15 cm. portals. Usually two fields anteriorly and two posteriorly are treated. If the bladder shows involvement a central field is also treated

over the pubic area. The treatment is given in divided doses. A 25 per cent erythema dose is given alternately on anterior and posterior surfaces. This gives a depth dose of 60 to 75 per cent on the lesions. The radium treatment depends upon the histopathology, the amount of involvement and extension of the lesion and whether or not the uterine canal is open. The dosage varies from 4000 to 7000 mc-hr. 4500 mc-hr. is given when the lesion is limited to the cervix, half of the dose in the cervical canal and half in the vagina. This system of treatment has been found very successful during the two years it has been practiced in Bellevue Hospital.

**The Management of Chronic Endocervicitis.** C. Jeff Miller, Surg., Gynec. and Obst., March, 1928, *vlvi*, 337-340.

Endocervicitis is an infectious disease which does not tend to cure spontaneously and the sequelae of which may lead to grave disorders. Every case therefore should have prompt treatment. The underlying pathology should receive the main consideration rather than the manifestations of the disease and this pathology cannot be clearly realized without a clear understanding of the histology of the cervix and the lymphatic circulation of the pelvis. Local treatment is very unsatisfactory and diathermy, ionization, etc., give only partially satisfactory results and are by no means harmless. The routine application of radium is too dangerous to be employed but it gives excellent results in selected cases. This class of cases should include only those in which it can be definitely demonstrated that no active or latent infection of the tubes is present. This decision is not an easy one even to an expert. A large number of cases can be averted by proper prophylaxis especially following parturition. All surgical operations of the cervix should be avoided when possible and when in question any surgery on this part is best preceded by a preliminary course of treatment the object of which is to reduce hypertrophy, and inflammatory reactions and to restore normal relation of the parts.

**The Roentgen and Radium Treatment of Gynecological Cancer.** M. J. Memenow, C. J. Arnstamm and E. R. Nowotjelnowa. *Fortschr. a. d. Geb. d. Roentgenstrahlem*, 1927, *xxxv*, 989-990.

The authors have observed 1030 cases of cancer of the female genitals which were treated by X-rays and radium. The cases were distributed as follows: 658 cancers of the neck of the uterus, 50 of the body of the uterus, 14 of the vagina, 25 of the ovaries, 273 recurrences after war-time operations, 10 recurrences after removal of ovaries. The authors conclude from this material that in operable cases the radiation treatment is generally not inferior to the surgical and can be applied quite as satisfactorily as surgery. In all inoperable and borderline cases combined X-ray and radium should be pursued and applied by those specially trained; 10 per cent of inoperable cases were saved from apparently unavoidable death in this manner. This treatment can be considered as only palliative in hopeless cases. The authors never resort to curettage or removal of the tumor by the cautery because this experience has shown that these affect the final results unfavorably. Biopsy was practiced as a rule and treatment begun at once. Radium in the form of the bromide is applied, 25 to 50 mg. radium element previously filtered through 1 mm. brass or 2 mm. of platinum. Usually the 50 mg. dose is applied into the

neck of the uterus or at some distance from the crater and allowed to remain in 24 to 48 hours. After eight days the radium treatment is repeated two to four times according to the case. In this manner the patient receives during a series 2500 to 4000 mg-hr. of radium. The radium should be removed immediately when temperature goes over 38 degrees. Severe tenesmus or complications in the bladder are also indications for removal. In the intervals between radium treatments the patient receives heavy deep X-ray treatments. The whole radiation series is repeated after two and one-half to three months and a third series may be given six months later.

### **EYE, EAR, NOSE and THROAT**

Edited by Jas. C. Braswell, M. D.  
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**A Study of Radical Mastoids:** White, L. E., *Ann. Otol., Rhinol. and Laryngol.*, 1928, *xxxvii*, 419.

The author studied fifty-four cases in which the radical mastoid operation was done at the Massachusetts Eye and Ear Infirmary. In one-third of the cases a previous mastoid operation had been performed, and in about half of them a tonsil and adenoid operation had been done. The fundi and visual fields were generally negative. In the operations only the Koerner flap was used and as a rule primary skin grafts were employed.

There were several severe postoperative complications. In one case traumatic facial paralysis developed but cleared up after nine months. Two of the operations were failures.

The importance of a close follow-up after radical operation on the mastoid is brought out by the fact that the poor results were attributed to neglect of the ear on the part of the patient and were corrected by proper treatment.

**The Roentgenogram in Mastoid Disease:** Taylor, H. K. *Am. J. Roentgenol.*, 1928, *xix*, 522.

The author states that the roentgenogram has an established place in otological diagnosis. It furnishes information relative to the anatomy of the mastoid and shows variations from the accepted normal. As both mastoids of the same subject are usually similar in size and structure, one side may be compared with the other. The size and location of the cells as well as the degree of pneumatization as revealed in the roentgenogram may be of great value to the clinician. The author gives a detailed description of the anatomical landmarks revealed by roentgen examination.

Pathological changes in the mastoid manifest themselves by variations in density, the absorption of the bony trabeculae, and erosions of the tegmen and sinus wall. Slight variations in density do not necessarily indicate mastoid involvement as they may be produced by oedema or other conditions of the soft tissues adjacent to the mastoid. When marked clouding of the mastoid process is noted, the presence of an exudate and granulations within the cells is indicated. Extreme clouding usually means new bone formation or sclerosis. Changes in density may be localized or general. Thinning, absorption, and destruction of the intercellular septa are due to a pathological process within the mastoid bone. When the process has extended beyond the cells it may produce a solution of continuity in the sinus wall or changes in density in the region of the tegmen.

The author gives special consideration to conditions producing a non-destructive mastoiditis characted by a slight increase of density. He describes in detail also the changes caused by a de-characterized by a slight increase of density. He structive process and those occurring in chronic otitic infections with sclerosis. He states that cholesteatomata are manifested by destructive and productive changes indicated by dense linear shadows surrounding radiolucent shadows.

The article is supplemented by roentgenograms of the various conditions discussed.

**Some Considerations of Vertigo Based on Experience:** Mueller, I. *Proc. Roy. Soc. Med., Lond.*, 1928, xxi, 1369.

In a discussion of vertigo, certain fundamental conceptions of space and time must be considered, and terms such as "organ of sense," "tonus," and "coordination" must be correctly defined and consistently employed.

Vertigo is the subjective feeling of uneasiness caused by the apparent staggering or rotation of surrounding objects or of movement of the ground and the sensation of falling or instability. There are two different forms of vertigo: the vertigo of touch and the vertigo of sight.

The "static organ" or "sixth sense" is the organ of equilibrium. Organs of sense are arrangements of the body able to receive adequate external and internal impulses and transfer them to certain nerves.

The idea of space is the psychological result of complex views of the size, form, position and state of motion of the things around us. Depending upon the mode of perception, there are two kinds of space: the space perceived by touch and the space perceived by sight.

"Tonus" denotes a specific permanent tension and contractibility of the muscles which exist in normal cases independently of voluntary innervation. "Coordination" is the result of a harmonious cooperation of groups of muscles.

The ear is an anatomical, physiological, and psychological unit functioning simultaneously and constituting an effective mechanism for the protection of the body.

The author has discovered that vertigo, tinnitus, headache, and deafness can be influenced by means of electromagnetic tuning forks in different keys. The acoustic as well as the motor or static function can be stimulated or tranquilized by sound.

**Volonskiascopy:** Morsman, L. W. *Am. J. Ophth.*, 1928, xi, 3 s. 433.

"Velonoskiascopy," the name given a new test for astigmatism devised by Trantas, means "viewing the needle shadow." Trantas, who is himself astigmatic, discovered that when he held a thin linear object before his uncorrected eye and looked at a chalk line on a blackboard, the object seemed to throw a shadow on the chalk line. He gives the following rules for his technique:

1. Refract the patient first as in the regular procedure.
2. Test the eye separately as in refraction.
3. Place the trial cross in the refraction frame (never a stationary frame such as the phoropter) with the arms of the cross in the principal meridians found during retinoscopy and other procedures.

4. Explain to the patient just what he is to look for and how to find it. As we are accustomed to focus vertical lines, tell the patient to find the vertical interval first and then, by moving the head slightly up and down, bring both into view.

5. Now add cylinders until the intervals are equal. The best technique consists in adding a minus cylinder with its axis on the broadest interval.

6. When the astigmatism is corrected, gradually reduce the amount of fogging sphere until the intervals due to diffusion circles disappear, and note if they remain equal to the last. The cylinder now in the frame represents the patient's astigmatism with its axis.

7. Lastly remember that this is a subjective test and its value depends upon the patient.

Errors may frequently be corrected by this procedure to 0.12 diopter. In the cases of less intelligent patients the test is doubtful and often worthless. In certain cases in which the findings or retinoscopy are doubtful but vision is normal it may prove to be the best method of finding the astigmatic error.

**The Location of the Focus in Optic Nerve Disturbances from Infection:** White, L. E. *Ann. Otol., Rhinol., and Laryngol.*, 1928, xxxvii, 128

White says that early writers and even many of the writers of today have directed their attention almost exclusively to the adjacent sinuses in an attempt to locate the focus of infection causing optical neuritis. Whenever a patient with neuritis presents himself to an expert diagnostician there are certain lines of investigation that are almost universally followed. According to most investigators, among whom Rosenau occupies a conspicuous place, the teeth have most frequently been found to harbor the infecting focus. Tonsils are second in importance, while the sinuses are a poor third, possibly not even holding that position. The appendix, prostate, fallopian tubes, gall bladder, etc., also must be considered. A primary focus may have produced so many secondary foci that its elimination does not cure the neuritis. At present it is believed that the infection usually travels by way of the blood stream.

Gradle, in 1915, was one of the first to revolt against the prevailing theory that optic lesions of the inflammatory type result from the close relationship between the sinuses and the optic nerve. He believes that the anatomical relations of the sphenoid and ethmoid cells to the optic canal are immaterial when optic-nerve involvement in accessory sinus disease is considered.

White says that systemic infection and intoxication from a primary focus is usually haematogenous. The bacteria may be compared with emboli loosened from the place of origin and carried by the blood to the smallest blood vessels. The evolution of the anatomical lesions and the clinical phenomena aroused thereby are dependent on the type and virulence of the bacteria, the character of the tissue, and function of the organ involved. The specific tissue reaction consists of a local inflammation with endothelial proliferation of the lining of the blood vessel either with or without thrombosis, blocking of the blood vessels, hemorrhage into the immediate tissue, and positive chemotaxis with resulting multiplication of the leucocytes and plasma cells in the infected area or fibrinoplastic exudate with local connective-tissue over-growth.

Practically all types of neuritis, no matter whether they are of the ophthalmic, trifacial, auditory, or ulnar nerves, arise from some focus of infection. Except in malignant disease of the sphenoid the author has never seen a case in which there was thought to be direct extension from the sinuses to the optical nerve and he believes that the infection is always haematogenous. The sinuses have been considered only as one of several possible foci and then only as a minor possibility. White makes no efforts to find in them some mysterious infection that does not show on a radiographic plate. If transillumination and radiographs of the nasal cavities are negative he immediately looks elsewhere for a focus.

Apical abscesses are only one of several factors in dental infection. The author emphasizes the fact that dental films do not tell the whole story and that only the specialist in dental pathology is competent in diagnosing diseases of the teeth.

Dental foci of infection are among the most active agents that endanger bodily well being. Some authors go so far as to advocate the removal of all devitalized teeth while others try to differentiate between healthy and diseased teeth. White says, "Were I confronted with the solution of such a problem in a patient with serious optic-nerve disturbance in whom, after thorough investigation, nothing but devitalized teeth had been found, I would unhesitatingly advocate their removal." He is also of the opinion that pulpless teeth should be viewed with considerable concern.

When the teeth, after a thorough investigation, have been pronounced negative, the tonsils should be considered. It is not always possible before operation to determine whether or not the tonsils harbor infection. Special attention should be given to any enlargement of the glands below the angle of the jaw and to congestion and swelling about the soft palate and pillars, which usually indicate the presence of infection. If all other findings are negative, suspicious tonsils should be removed.

Of all the sinuses the antrum is the commonest seat of infection. It may show only a thickening of the lining, but if this thickening is marked it is a definite indication of pathology even if no secretion is noted. Any sinus that shows evidence of definite infection should be drained and ventilated. In the author's experience ethmoid infection has been rare.

The author says that if "we concede that optic neuritis may arise from haematogenous infection, it logically follows that it may arise from any condition in the body that is capable of furnishing bacteria or their toxins to the blood stream."

It is practically always possible to determine the source of an infection and the focus should be eliminated unless the patient is in a weakened condition. If he is convalescing from influenza or has had some other debilitating disease, operative treatment may endanger his life. In such cases the intestinal tract should be kept healthy and the patient's general health built up so that he can combat the infection. Retrobulbar neuritis frequently develops in patients with low resistance.

The author gives a resume of 30 cases of optic nerve disturbances due to infection.

Otological Nystagmus: Quittner, S. S. *Ohio State M. J.*, 1928, xxiv, 278. The Neurology of Nystagmus: Baumoeel, S. *Ohio State M. J.*, 1928, xxiv, 283.

Quittner discusses the more practical phases of otological nystagmus and its relationship to the peripheral organ. As a result of adequate irritation of the labyrinth the end nerve filaments receive stimuli through the fine hair which bends to the slightest motion of the endolymph. Certain definite physiological reactions, such as nystagmus, are obtained, depending upon which canal is irrigated the most. A nystagmus due to the vestibular apparatus is a distinct entity and must be distinguished from a non-labyrinthine type, which is characterized by an oscillatory or undulating nystagmus. Einstelling's nystagmus is also non-labyrinthine.

There are three degrees of labyrinthine nystagmus which may be caused by disturbance in the peripheral organ of the vestibular nerve, by disturbance of its central organ or ramifications, or by disturbance of the eighth nerve, or which may be induced by experimental methods. A spontaneous labyrinthine nystagmus is diagnosed by means of the following signs: (1) dizziness which is always in a systematic direction, (2) a parallel association of the eyes, (3) some abnormal type of nystagmus, (4) inversion of a spontaneous nystagmus which indicates that it is a nystagmus of a non-labyrinthine nature.

The induced labyrinthine tests are described and discussed in detail together with some practical considerations. When a labyrinth has been destroyed, compensation or adjustment may occur and may be studied by means of the turning test.

Nystagmus in representative types of labyrinthitis and in non-suppurative diseases is also considered.

Baumoeel outlines the neurological aspect of nystagmus. He says that vestibular nystagmus is a reflex movement of the eyeballs caused by stimulation of the vestibular apparatus. This reflex consists of an afferent path, a reflex center, and an efferent path. The afferent path is the vestibular nerve which ends in three distinct nuclei. One of these is Deiters' nucleus, which is regarded as the nystagmus center and which contains a separate center for each of the three forms of nystagmus. The fibers of the oculomotor nerve represent the efferent path in the nystagmus reflex arc.

The author discusses the mechanism of this vestibulo-ocular reflex and also of the vestibular nystagmus. He says that the normal function of the vestibulo-ocular reflex is to assure and regulate the tonic innervation of the conjugate eye muscles and that any disturbance in the vestibular apparatus causes an upset of this equilibrium and produces a nystagmus. The only structure capable of producing vestibular nystagmus are the labyrinth, the vestibular nerve, its nuclei in the medulla, the arcuate fibers and the posterior longitudinal bundle. Nystagmus may also be produced by a lesion which gives rise to an increased intracranial pressure or a diastasis.

For practical purposes a labyrinthine nystagmus of great amplitude and long duration and not accompanied by dizziness is a central and not a peripheral labyrinthine nystagmus. The direction of falling in labyrinthine affections is dependent on the position of the head, but this is not so in the central affection.

Vertical nystagmus almost invariably points to the posterior fossa as the seat of trouble. While the combined horizontal-rotatory nystagmus is characteristic of affections of the labyrinth, it is caused by affections of the central vestibular system.

The responsible lesion can be determined by functional tests of the labyrinth and by continual observation of the nystagmus. In the differentiation between cerebellar and cerebral abscess nystagmus is an extremely valuable factor, as it is rare in the latter type. Diseases of the central nervous system not causing an increase in intracranial pressure will not affect experimental nystagmus if the reflex arc is intact. Increased intracranial pressure usually produces a hyperirritable labyrinth. A total loss of labyrinthine irritability is the result of a total destruction of the vestibular nuclei, of both posterior longitudinal bundles or of all the nuclei of the eye muscle nerves.

**The Surgical Approach to the Ethmoid: Vergé, C. A. J. Laryngol. and Otol., 1928, xliii, 266.**

The author describes a new approach to the ethmoid which gives a clear binocular view of the diseased parts and affords the most efficient drainage possible. An incision three-quarter inch in length is made in the sulcus between the eyeball and the frontal ridge, to a point just above the inner canthus. This incision eventually exposes the floor of the frontal sinus, the lamina papyracea, the nasal process of the frontal bone, the lachrymal bone, and the frontal process of the maxilla. The floor of the frontal sinus is removed with part of the lachrymal bone and part of the frontal process of the maxilla. Infections of the frontal sinus is then dealt with. In the next step, the frontonasal duct is enlarged and a wide opening is made into the nose by cutting through the anterior ethmoid cells. By standing almost at the head of the table, the surgeon is able to obtain a good view for removal of the middle turbinal and posterior ethmoid cells. A rubber drainage tube is placed in the enlarged frontonasal duct and brought out at the anterior nares.

The average period of hospitalization is about nine days. Ultimately, the scar becomes practically invisible.

Vergé has used the described technique in 26 cases without any fatalities and recommends the procedure for a more extensive trial in chronic cases of ethmoid suppuration.

**The Use of Iodized Oil in the Diagnosis of Nasal Sinus Disease: Anderson, H., and MacDougal, C. Arch. Otolaryngol., 1928, vii, 340.**

For the diagnosis of disease of the maxillary sinus, the authors introduce from 3 to 5 c. cm. of iodized oil into the sinus with a syringe after preliminary lavage with sterile water. The examination is then made by means of the fluoroscope and film. Partial filling of the sinus is advantageous during the examination under the fluoroscope because it permits separate flooding of the various angles and surfaces by manipulation of the head.

When the mucous membrane is uniformly swollen, as in acute sinusitis, the oil collects in a small pyramidal mass in the center of the sinus with a narrow extension reaching medially and upward toward the ostium. This mass is stationary when the head is moved.

In chronic disease, several different appearances may be exhibited, depending upon the nature of the pathological changes in the membrane. The thickness of the mucoperiosteum is determined by comparing the body margin with the oil margin. Polypi or abscesses within the mucous membrane are shown by filling defects.

When roentgenograms are to be made, sufficient oil must be introduced to cover the anterior wall when the face is down.

The article contains diagrams illustrating the action of the oil in a partially filled sinus and roentgenograms showing various filling defects.

## BOOK REVIEWS

**THE ELEMENTS OF THE SCIENCE OF NUTRITION**, by Graham Lusk. Ph. D., Sc. D., Professor of Physiology at the Cornell University, Medical College, New York City. Fourth edition, reset. Octavo of 844 pages. Philadelphia and London: W. B. Saunders Company, 1928. Cloth \$7.00 net.

**ADDRESS ON SURGICAL SUBJECTS**, by Sir Berkeley Moynihan, Bart., President of the Royal College of Surgeons of England. Octavo of 348 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$6.00 net.

Moynihan is one of the most authoritative writers in the medical profession today. A profound and keen observer, a remarkable lecturer and successful speaker. His writings probably have more appeal than any living physician. This volume consists of 14 addresses. Those of great interest are "Acute Pancreatitis," "The Gall Bladder and its Infections," "Perforation of Gastric and Duodenal Ulcers," and "The Approach to Surgery."

**THE SURGICAL CLINICS OF NORTH AMERICA** (Issued serially, one number every other month). Volume 8, number 5. (New York Number, October, 1928), 293 pages with 141 illustrations. Per Clinical year (February, 1928, to December, 1928). Paper, \$12.00; Cloth, \$16.00. Philadelphia and London.

The leading article in this issue and certainly one which should be studied by the surgeon and internist is "Acute Appendicitis With Reference to the Advances in Treatment During the Last Ten Years and the Possible Progress for the Ensuing Ten Years," by Frederic W. Bancroft.

Dr. Bancroft points out the following significant facts:

1. Increasing ability of doctors to early diagnose and to refer patients for operation.
2. Improved anesthesia.
3. The use of the Levin tube.
4. Improved drainage in Peritonitic cases.
5. Hypertonic saline infusions and repeated transfusions for sepsis.

All of these together have greatly lessened mortality. Early jejunostomy is mentioned; in the writer's opinion it is not stressed sufficiently as of remarkable life saving value in certain cases. Inasmuch as we have had nothing otherwise worth while to offer "Intravenous Injections of Gentian-Violet in the Treatment of Phlebitis," by M. Stanley Brown will prove of interest to those having these difficult cases to treat.

"The Radical Operative Cure of Gastric Duodenal Ulcer" is presented by Professor A. A. Berg. Berg believes in subtotal gastrectomy as the best means if surgical intervention is decided; gastroenterostomy does not find favor with this authority.

**REGIONAL ANESTHESIA**, by Gaston Labat, M.D., Clinical Professor of Surgery, University and Bellevue Hospital Medical College, New York, Laureate of the Faculty of Science, University of Montpellier; Laureat of the Faculty of Medicine, University of Paris; formerly Special Lecturer on Regional Anesthesia; The Mayo Foundation, University of Minnesota. With a foreword by William J. Mayo, M.D.. Second edition, revised, Octavo of 567 pages with 367 original illustrations. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$7.50.

It is doubtful if anything has, within the past decade, so profoundly affected surgery and is so far reaching importance as regional anesthesia. Even to physicians some phases of regional anesthesia, intraspinal for instance, when administered by the adept are truly spectacular. Its uses and applications are almost limitless. To the layman and the uninitiated physician there is something rather shocking and appalling incident to the invasion of the spinal column. As a matter of fact the writer believes that spinal anesthesia has been the means of successfully affording hundreds of operations upon that type of patients who could hardly have possibly survived any other type of anesthesia. Certainly regional anesthesia in all its phases is here to stay and it will be found more and more in use as time goes on. Labat has given us a classic in his volume. Every surgeon should consult it.

**NEUROLOGICAL EXAMINATION**. An exposition of tests with interpretation of signs and symptoms, by Charles A. McKendree, M.D., Associate, Department of Neurology, College of Physicians and Surgeons, Columbia University. With a foreword by Henry Alsop Riley, M.D. 12 mo of 280 pages with 88 illustrations. Philadelphia and London: W. B. Saunders Company, 1928. Cloth, \$3.25 net.

This book is intended to familiarize the medical student and those interested in specializing with the systematic form of examination of the central nervous system. The positive requirement of most comprehensive examination in neurological cases is too well known to need discussion. This volume gives a complete outline of the work.

**ESSENTIALS OF PRESCRIPTION WRITING**—By Cary Eggleston, M.D., Assistant Professor of Clinical Medicine, Cornell University, Medical School. Fourth Edition, revised; 16 mo. of 153 pages. Philadelphia and London: W. B. Saunders Co., 1928. Cloth, \$1.50 net.

**A TEXT BOOK OF SURGERY**—By W. Wayne Babcock, M.D., F.A.C.S., Professor of Surgery and of Clinical Surgery in the Temple University, Philadelphia; Surgeon to the Samaritan Hospital and to the American Hospital for Diseases of the Stomach. Octavo of 1467 pages with 1050 illustrations, nine of them in colors. Philadelphia and London: W. B. Saunders Co., 1928. Cloth, \$10.00 net.

This very complete work on general surgery, divided into 58 chapters, has four general sub-

divisions concerned with General Surgery, The Surgery of Systems, Surgical Technic and Regional Surgery. Perhaps Dr. Babcock is best known to the American profession as master of the fine art of intraspinal anesthesia, his case records upon this type running into many thousands, and his successes bordering upon the marvelous, to the uninitiated seemingly impossible of performance. Therefore, the sections devoted to Regional Anesthesia in its various applications are more than passingly interesting. Throughout the work is extremely practical, based upon standardized procedures of today, which the author states, he may be ready to abandon tomorrow upon the perfection of better processes in the science of surgery, which he recognizes as a constantly changing and progressive science.

#### SYPHILITIC THERAPY

The Journal of Chemotherapy for October (Volume V, No. 3), contains an interesting article on "The Chemotherapy and Biologic Therapy of Malignant Tumors" by Dr. John A. Kolmer. There are, also, articles on "The Chemotherapy of Protozoan Infections Other Than Syphilis", "Syphilitic Therapy", and "Liver Treatment in Secondary Anemia", also, "New Views on Chemotherapy of Cancers", editorials, abstracts, and therapeutic news.

This quarterly journal will be sent gratis to physicians interested in Chemotherapy, research and the treatment of syphilis. For copies address the Dermatological Research Laboratories, 1720 Lombard Street, Philadelphia, or the Abbott Laboratories, North Chicago, Ill.

#### COUNCIL ACCEPTS OPTOCHIN

In compliance with the request of the Council on Pharmacy and Chemistry the name "Numoquin" has been changed to Optochin."

Optochin is used not only in the treatment of pneumonia but also in such conditions as pneumococcic meningitis and pneumococcic serpiginous ulcers. In the treatment of pneumonia it is administered by mouth.

The theory upon which the treatment of pneumonia with optochin base is founded has evolved from the results obtained by a large number of investigators, and is outlined as follows:

The maximum bactericidal power of the remedy must be maintained continuously for a definite period—1 to 3 days—employing the minimum quantity of the remedy necessary for the purpose. It was found in practice that, provided optochin base is used, and given in doses of 4 grains every 5 hours, day and night, and further, provided the treatment is begun within 24 hours, or at least not later than the second day after the onset of the disease, the results are all that could be wished. The fever abates rapidly, the course of the disease is shortened and rendered milder, and the patients experience a sensation of euphoria, while the appetite and general condition improve.

The base is used because, being practically insoluble in water, it is but slowly taken up into the blood circulation. With every dose of optochin base about 5 ounces of milk are given. The milk prevents too rapid formation of the more soluble optochin hydrochloride by the action of the hydrochloric acid secreted and thus assists in maintaining a uniform optimum concentration of the remedy in the blood. No other food or drink is given during the three days' treatment.

## NONTUBERCULOUS CHILD

It is one of the pediatrician's frequent experiences to have brought to him a child whom the mother has anxiously suspected of having tuberculosis of the lungs. In the great majority of cases her suspicions are unfounded clinically. Underweight and a run-down condition are clearly indications for investigation, according to Joseph Brennemann, Chicago (Journal A. M. A., Feb. 25, 1928). So-called underweight has no significance per se. Some children are "skinny" because they are active, and active because they are "skinny"; others are phlegmatic because they are fat or fat because they are phlegmatic. There is no reason in health, other things being equal, why one should be converted into the other or why the two should be brought to a common artificially determined medium. It cannot be emphasized too strongly that a normal weight and an apparently normal state of nutrition do not exclude tuberculosis. A persistent cough evidently requires careful investigation. The story of frequent attacks of coughs over a period of years, Brennemann says, would cause him to lean away from a diagnosis of tuberculosis rather than toward it. A chronic tuberculous cough would be more apt to be continuous, not widely intermittent, and in a child would moreover almost surely be accompanied by fever, fatigue, pallor, localized fine rales, suppressed breathing or other lung conditions, all of which are regularly absent in the type of case considered. The presence of a foreign body sometimes offers greater difficulties in this connection. The neglected case with a chronic cough, and localized moist lung conditions, often lasting for many years, can easily be confused with tuberculosis. In such cases the foreign body moves freely, is metallic in nature and can easily be found with the roentgen ray, and its removal even after many years leads to a prompt cure. A still more frequent cause of anxiety to the parents is a persistent low-grade temperature. In Brennemann's experience a fairly persistent temperature of 99 to 99.5 and even occasionally 100 is many times more frequently due to some other condition than it is to tuberculosis. Such temperatures frequently occur after upper respiratory tract infections. If, however, the temperature goes to 101, even on rare occasions, or if the child has a positive Pirquet reaction, the child should be put to bed as a sick child and a diligent search made for the underlying pathologic condition with a real interest in the possibility of a tuberculous infection. A further cause for worry is the child that has had pneumonia and now after weeks, perhaps months, still has a fever and pathologic changes in the lungs. Has he a tuberculosis or an unresolved pneumonia? If there was a frank pneumonia in a previously healthy child the chances are all in favor of an unresolved pneumonia. If the beginning was insidious and the date of onset not well marked, if the temperature was never over 101 or 102, or if there was a decided pleuritic pain, one more strongly suspects tuberculosis. A serous pleural effusion makes it almost positive. In the author's experience, if a healthy child has had a definite pneumonia at the onset, the fever and physical condition that per-

sists often enough for weeks and even months will eventually clear up and are practically never due to a superimposed tuberculosis. There is one chest condition due to tuberculosis in which the roentgenologist can readily make the diagnosis from his film, and the physician cannot with certainty clinically, because of the absence of all physical signs, i. e., a miliary tuberculosis or rather an early miliary tuberculous bronchopneumonia, especially in the baby. But even here there is room for caution. Fortunately the idea no longer persists that tuberculosis is rare at the extremes of life. The younger the individual, the younger the child, the younger the baby, the greater the danger of contagion, and the new-born baby should be guarded against tuberculosis as against the seven plagues. If Brennemann can avoid it, he will never allow a new-born baby to live in the same house with its own mother, or with any one else, that has any suspicion of an open tuberculosis. An open or suspected open tuberculosis is an absolute contraindication to nursing. The baby that has been exposed even for a short time to an open tuberculosis, and the older child that has been seriously exposed should be considered tuberculous and so far as possible, treated as such no matter what the present state of health may be. The grandfather, who lives with the family, who has coughed for years with an assumed "old man's cough," is not infrequent cause of contagion to the grandchildren.

## INTENSIVE POSTURAL REST IN TREATMENT OF PULMONARY TUBERCULOSIS

W. A. Gekler and B. J. Weigel, Albuquerque, N. M. (Journal A. M. A., Feb. 25, 1928), believe that in intensive postural rest as they use it they have a method of treatment of pulmonary phthisis that deserves to rank with artificial pneumothorax and thoracoplasty in value and effectiveness. It is applicable in a wider range of cases. Complications are no more frequent and certainly less dangerous than with pneumothorax and thoracoplasty. When results are not obtained, pneumothorax or thoracoplasty may still be used. They see striking benefits, i. e., the maximum amount of healing possible in view of the nature and extent of the lesion, in fully one-fourth of their cases, and in another fourth there is considerable improvement. When clinical cures are obtained with postural rest, they are just as enduring as with any other form of treatment.

## THE SEASON FOR COD-LIVER OIL

Cod-liver oil is in greater demand in winter than in summer because of its calories and its vitamins. The calories can, of course, be obtained by other means, but vitamins, especially vitamin D, are on the ebb generally in cold weather, and there is relatively little direct sunlight to increase the amount.

Vitamin D is antirachitic and a defense against bronchitis; and a cod-liver oil that is known to be rich in it and otherwise acceptable should be preferred to brands of uncertain vitamin content. The standardized cod-liver oil of Parke, Davis & Co. goes beyond U. S. P. requirements in being assayed for both fat-soluble vitamins A and D, and the manufacturers claim that it contains a minimum of 13,500 A units and 3,000 D units in each fluid ounce.

We understand that interested physicians can obtain a bottle free for examination and trial on request.

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